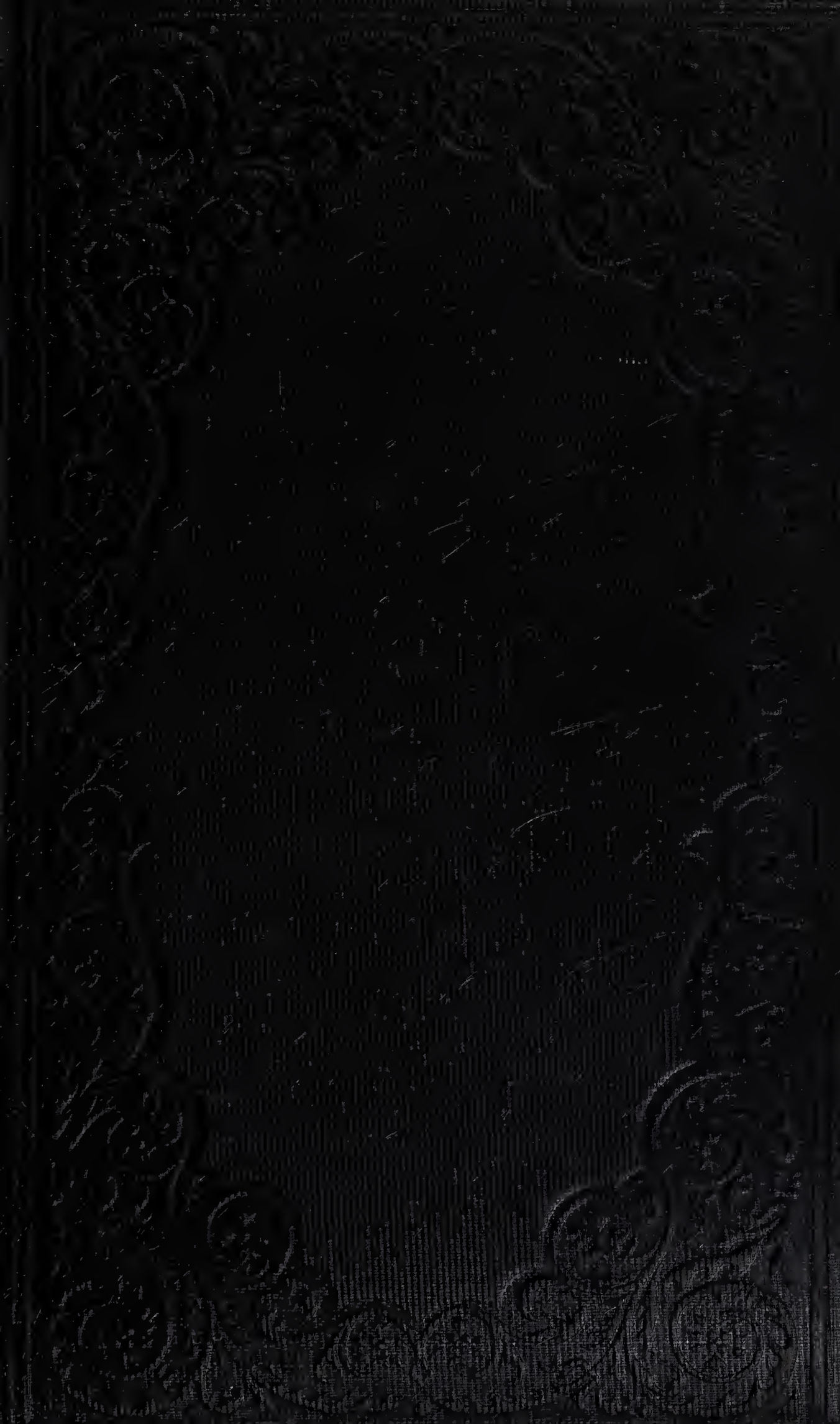

BRAITHWAITE'S RETROSPECT.

VOL. XCVII. JANUARY—JUNE, 1888.

☞ Letters for the Editor to be addressed Dr. BRAITHWAITE, Little Woodhouse, Leeds.
Parcels of Books, &c., to be forwarded to Messrs. SIMPKIN, MARSHALL & Co., London.

THE

RETROSPECT OF MEDICINE:

BEING

A HALF-YEARLY JOURNAL

CONTAINING A RETROSPECTIVE VIEW OF EVERY DISCOVERY AND PRACTICAL IMPROVEMENT IN THE MEDICAL SCIENCES.

EDITED BY

JAMES BRAITHWAITE, M.D.Lond.

OBSTETRIC PHYSICIAN TO THE LEEDS GENERAL INFIRMARY.
LECTURER ON DISEASES OF WOMEN AND CHILDREN AT LEEDS SCHOOL OF MEDICINE.
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CORRESPONDING FELLOW OF THE GYNÆCOLOGICAL SOCIETY OF BOSTON U.S.

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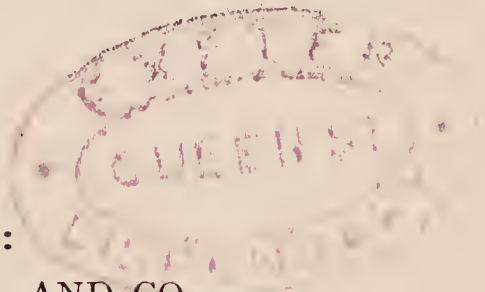

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[*The American Edition of this work (reprinted from advance sheets supplied by the Editor) is published by the* W. A. TOWNSEND PUBLISHING COMPANY, 153, *Broadway, New York, U.S.*]

[*A Spanish Edition (by arrangement with the Editor) is published by* D. CARLOS BAILLY-BAILLIÈRE, *Plaza de Santa Ana, No.* 10, *Madrid.*]

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Synopsis.

An Abstract of the most Practical Articles in this Volume, with other Short Articles from the Medical Journals, showing the most important indications of Treatment published by different writers during the half-year.

Arranged Alphabetically.

AFFECTIONS OF THE SYSTEM GENERALLY.

Acute Rheumatism.—*The Salicylates.*—At the Medical Society, on February 13, 1888, Dr. Donald Hood read an elaborate paper on the treatment of acute rheumatism, with special reference to the use of the salicylates, based upon the reports of more than 2,000 cases. Of these, 850 were from the records of Guy's Hospital before the introduction of salicylates; the remainder were all treated with salicylates from the time of admission into hospital, 515 of them being treated at St. Bartholomew's Hospital and 635 at Guy's. The cases chosen were all typical acute sthenic rheumatism, occurring in patients of both sexes under thirty-five years of age. Two marked results of administration of salicylates were a loss of joint pain and a fall in the temperature, but relapses were more common than under the older methods of treatment. The salicylates appeared to have no effect whatever in either reducing, preventing, or limiting the intensity of cardiac lesions. The formidable complication of hyperpyrexia was discussed and cases referred to illustrating the characteristic symptoms; it was as common among patients treated with salicylates as among those treated on general principles. It might occur even where the drug had been given regularly in full doses. For treatment, it was recommended to stop administration of the drug, to apply cold locally, and to give stimulants. His recent inquiries confirmed the opinion he expressed in 1881, that patients taking salicylates, though quickly losing their pain, were often left enfeebled, and remained in hospital longer than those who did not have the remedy. The mortality between the two sets of cases was much the same. For purposes of classification and treatment, he divided acute rheumatism into three large groups—that of the child, the adult, and the aged. In children, who had often severe cardiac lesion without much joint pain or pyrexia, there was little indication for rigid specific treatment, whether by alkalies or salicylates. It was in adults that the administra-

tion of salicylates would be found of most good. In the third group, cases occurring amongst people between thirty-five and fifty were rare, and often presented anomalous symptoms, some verging on gout, others truly rheumatic, and others, again, with nervous systems damaged by alcohol, from whom danger was to be feared from delirium and hyperpyrexia. In these anodynes were more useful. In conclusion, Dr. Hood believed that in cases of ordinary acute sthenic rheumatism salicylates might be given with advantage, and the advantage was greater and more permanent where they were exhibited in combination with alkalies, but when the attack was complicated with the severer forms of pulmonary or cardiac inflammation, under which circumstances there was usually a coincident mitigation or even absence of joint pain, he did not think there was the same indication for using the drug. (Lancet, Feb. 18, p. 325.)

Acute Rheumatism.—Aufrecht has had an interesting experience in the treatment of rheumatism. As the result of extensive trials he came to use salicylic acid in acute cases to the exclusion of all other remedies, and with complete success so far as the disease was concerned. He used the acid in full doses, 90 grains pro die for the first two or three days, and 60-45 gr. pro die during the following eight or ten days. Unfortunately this treatment could not be fully carried out in every case. Burning pain in the stomach, vomiting, tinnitus aurium, or dyspnœa sometimes made the drug unbearable. The use of salicylate of soda in corresponding doses was no improvement. Not only did it cause the same disagreeable symptoms as the acid, but in Aufrecht's hands was not as effective in subduing pain and fever. On the introduction of salol, a trial of it showed a marked improvement in many respects. Causing but little local or general disturbance, its use could be continued almost indefinitely. Thus, one patient of Aufrecht's took altogether more than 3,500 grains in doses of 90 grains daily. On the other hand, in acute polyarthritic cases it was not so effective as salicylic acid. Whereas the latter usually subdues pain and fever in the first twenty-four hours, salol requires three or four days, though pain was greatly ameliorated within the shorter period. In consequence of its many advantages salol was adopted as the routine treatment by Aufrecht, but on the occurrence of a fatal case of acute endocarditis under its use—a thing not met with among 600 cases treated by salicylic acid—it was discontinued. Since then what might be called the mixed treatment has been followed. In this, acute cases receive during each of the first two days 90 grains of the acid, after that the same amount of salol. Later, the patient still remaining in bed, the salol is reduced to 60 grains daily. As salicylic acid is usually well borne for two days, but frequently no longer, this recommends itself as the best

routine treatment. If possible the acid can be continued; if, on the other hand, it can not be taken, salol alone may be used. In chronic articular rheumatism salol is preferable in every respect, not only avoiding the dangers attending prolonged use of salicylic acid, but offering more positive assurance of cure. (American Journal of Medical Sciences, March, p. 286.)

Arsenic Cancer.—At the Pathological Society of London, on Dec. 6, 1887, Mr. Jonathan Hutchinson desired to make the proposition that the internal administration of arsenic in large doses over long periods might produce a form of cancer which was of the epithelial variety, but presented certain peculiarities. He showed a drawing of the foot of a gentleman who had taken arsenic for psoriasis for many years; a corn on the sole of the foot ulcerated, and at first had the appearance of perforating ulcer. Perfect immobility was not followed by any improvement. The palms of the hands also became affected, small corns developing. The growth in the foot was excised, and the patient recovered. The patient was now under the care of Professor Chiene; the microscopical examination was inconclusive. He also showed drawings of the hands of an American physician who had taken arsenic for long periods in considerable doses. A rough condition of the palms and soles developed though the psoriasis was cured. These early growths in these cases he observed parenthetically, were corns not warts, and the growths were never papillary. This patient then got on the front of the wrist of the left hand a growth in the subcutaneous tissue, the other hand also became affected; the growths perforated the skin and fungated; they had the appearance of a syphilitic lesion, but the patient had never had that disease. The growths were scraped away and also excised; microscopical examination was again at first inconclusive, but the opinion finally leaned to the view that the disease was cancer. The patient then came to Europe, and in deference to the opinion of several surgeons, antisyphilitic remedies were fairly tried, but gave no result. Both hands were amputated; the patient died eighteen months later. Nodules of epithelial cancer were found in the axillary glands on the left side, in both lungs, in the suprarenal capsules, in a rib and in other parts. He also showed drawings from another case of a lesion of the palms, exactly resembling the corns seen in the other cases. This patient had a cancerous growth in his neck, and took arsenic in large doses, for months together; the skin became muddy and thick, and patches like psoriasis developed upon the elbows and other parts, but in the palms and soles the corny masses formed but were not followed by cancer. About five years ago Dr. Clifford Allbutt had given him the particulars of a case of a young lady who had taken arsenic for pemphigus for many years with occasional inter-

missions. An ulcer had developed on the crest of the ilium, the glands enlarged, a tumour formed in the thigh, and the patient died at the age of 25, owing to the enlargement of these growths. Mr. Hutchinson also mentioned a case which had been under the care of Mr. Waren Tay and himself. The patient was a clerk, aged 34, who had taken arsenic for a long time for psoriasis. The palms of his hands and soles of his feet were speckled over with corns when he applied at the Skin Hospital; finally, epithelial cancer of the scrotum appeared, and was excised; the patient was then lost sight of. He thought the facts he had brought forward warranted him in advancing the theory that the cancer in these cases was due to arsenic with the hope that attention might thus be more generally directed to the point. (British Med. Journal, Dec. 10, p. 1280.)

Creolin as an Antiseptic.—An antiseptic which Dr. Neudörfer has advantageously tried is creolin. This is a sort of tar which is obtained from the English pit coals by dry distillation, and from which the poisonous hydro-carbons have been eliminated. The chemical constitution is not yet established, but owing to its characteristic qualities it can be very easily recognised by the practitioner. It is derived from the aromatic class of hydrocarbons, and is closely related to creasote, carbolic acid, resorcin, hydrochinon, &c. The very first results which Dr. Neudörfer had obtained with this drug were very favourable, and he had for this reason at last abandoned all the other antiseptics and used only creolin. The first success he had obtained with it was in the case of a girl, aged 7, who suffered from *erysipelas bullosum migrans faciei.* The skin of the nose, the upper lip, and over both zygomatic arches was greatly stretched and much reddened; some pustules were also present. The lower eyelids were œdematous, the frequency of the pulse and the temperature were increased, and the patient also suffered from headache. Dr. Neudörfer said to the relatives that the erysipelas would spread over the forehead and the ears, and that it would disappear in from seven to ten days. He ordered a 2 per cent. solution of hydrocarbonate of sodium with syrupus simplex, and directed the erysipelatous parts to be brushed thrice a day with undiluted creolin. The erysipelas did not advance; the pustules dried up; the infiltration of the skin disappeared, and the patient ceased to complain of any pains. The symptoms of fever also disappeared, and the erysipelas was cured in two days and a half. Dr. Neudörfer has, since that time, tried creolin in two other cases of erysipelas with like success. In former times he used always to treat severe cases of erysipelas successfully with subcutaneous injections of carbolic acid, and he had therefore no reason to resort to the method of Krascke. Since he had tried creolin, however, he no longer used subcutaneous injections of car-

bolic acid, which had recently been again recommended by Fehleisen. The second case which had been antiseptically treated with creolin was that of a butcher, aged 27, who had cut the last phalanx of his left middle-finger and the terminal front of his ring-finger. After treatment with a 2 per cent. solution of creolin and the application of creolin gauze, the wound healed, in eight days, without any suppuration or swelling. In the third case, in which a tumour in the region of the lower jaw was removed from a woman aged 30, creolin was used during operation and afterwards as a dressing, two silk sutures closed the wound, and no drainage-tube was put in. On the third day the sutures were removed; the wound was already closed, and the dressing could also be removed. The author has since used creolin in several minor operations both in the Polyklinik and in private practice, and has always observed that it relieved pain, checked the hemorrhage, and limited suppuration. At first he used a 2 per cent. solution, but he has now found that creolin is efficient in a $\frac{1}{2}$ per cent. solution. Dr. Neudörfer prepares a fresh solution each time by adding two drops of creolin to 200 grammes of water. He uses only ungreased gauze, which, being folded from ten to twelve times, is wrung out of the milky solution and applied to the wound, which is afterwards covered with several layers of dry gauze. The dressing may be left until healing has taken place. This dressing is very convenient, both for the physician and the patient, and it is also very cheap. The surgeon's wards, the patient's skin, and the instruments can be disinfected with a 2 per cent. solution of creolin. Dr. Neudörfer concludes his paper by stating that he is so satisfied with creolin that he does not desire any other antiseptic. For country practice as well as for use in war creolin is, in his opinion, the most trustworthy and convenient, as well as the cheapest and most harmless antiseptic. (British Med. Journal, Jan. 21, p. 157.)

Creolin.—How to Use it.—In reply to inquiries from numerous medical brethren as to the best methods of employing creolin in various classes of cases, Dr. Max Kortüm has published some additional account of his experience of this substance, the manufacturers of which are Messrs. W. Pearson and Co., of Hamburg. Solutions have at first a milky appearance, but if allowed to stand for any considerable time become brownish, owing to the resinous principles and naphthaline salts separating out. For surgical purposes two solutions are employed—a 2 per cent. solution and a half per cent. solution. The stronger one is used for disinfecting the hands, the instruments, and the surface of the patient's body. This has no undesirable effect on the skin or on the instruments. The weak solution is employed for irrigating wounds, for saturating tampons, and for moistening dressings, &c. Creolin has a decided hæmostatic action, and yet

even in strong solutions does not act as a caustic. It may, if very strong, cause smarting, but only temporarily. In a case where a pulmonary cavity communicated with the cavity of the pleura which had been opened for empyema, copious hemorrhage occurring some days after the operation from the lung cavity, a plug soaked in a 2 per cent. solution of creolin was inserted and stopped the hemorrhage at once, the only unpleasant effect produced being that the sputa tasted of creolin. In cases of large burns and bedsores permanent baths of creolin water have proved very successful. In the case of bedsores Dr. Max Kortüm suspends the part affected in a pan containing a 5 per mille solution. In midwifery cases the vagina may be washed out with the $\frac{1}{2}$ per cent. solution, both before and after delivery. Where the perineum is ruptured this solution has an excellent effect, when used to moisten compresses kept applied to the part. In a case of atony of the uterus post partum a plug soaked in a 2 per cent. solution proved very successful. Surgical dressings, gauze and moss applications, can be moistened every day or two with the creolin solution. In addition to watery solutions, creolin may be prescribed combined with oil or cerate, or as a powder with boracic acid as a basis. Cotton wool is also impregnated with it. The 5 per cent. oil may be used for itch or pediculi. In gonorrhœa injections of a watery solution of from 1 to 5 per 1,000 are very effectual, and in vesical catarrh a 1 per 1,000 solution may be injected with advantage. Both in this affection and in gonorrhœa creolin may also be given internally in pills containing from $1\frac{1}{2}$ to $4\frac{1}{2}$ grains each, three or four times a day. (Lancet, March 17, p. 540.)

Graves's Disease.—*Sulphate of Spartein in.*—The effects of spartein in three cases of Graves's disease were remarkable, and if a wider experience confirms them, it will be a valuable remedy in this disease. In two of the cases the usual remedies, including a long course of arsenic and the passing of a constant current through the neck, &c., had been tried without effect. On giving spartein the pulse-rate dropped in one week from constant rates of 132 and 136 to the minute, to rates of 72 and 84 respectively, the coincident throbbing and pulsation of the thyroid and of the great vessels of the neck ceased. Other symptoms were relieved, especially the nervousness and weakness previously complained of, and the size of the thyroid tumour distinctly diminished. The gain in strength and general well-being, with improvement of appearance due to gain of flesh and colour, was striking. In the third case, a more severe example of the disease than either of the preceding, there was general improvement, with diminution of violent pulsation in the thyroid and over the neck and face, but the pulse-rate of 144 was not reduced to less than 96 to the minute, varying between this and 108. This patient

suffered from continual fine tremor of the muscles, especially in the limbs; while taking spartein this tremor remained absent, but returned if the drug was left off. She has improved in strength and feels well while she is taking it. She has now been taking one-quarter of a grain every four hours for six months. (Dr. J. Mitchell Clarke, p. 171.)

Acute Enlargement of the Thyroid Gland in a Child.—At the Clinical Society, on December 9th, Dr. Thomas Barlow read notes of the case, which was that of a boy, aged 3, previously healthy, and just recovering from a slight attack of erythema nodosum. The day after he had been taken out of doors he had a little nasal catarrh, and complained of pain in the neck. A slight enlargement of the thyroid gland was found. The whole gland was involved, but the left lobe more than the other parts. The enlargement increased and gave rise to much pain and considerable dysphagia and was attended with pyrexia as high as 103°. The acute phase lasted four days, and the total duration of the enlargement was about a fortnight. Great relief was obtained by the application of a single leech over the centre of the swelling. After the subsidence of the fever there was very great anæmia and some tendency to collapse, but the boy made a complete recovery to health after three weeks' stay at the seaside. A summary of the literature of the subject was given in regard to acute enlargement of the gland as distinguished from goître strictly so called. Besides the idiopathic, traumatic, and metastatic forms described by Lucke, reference was made to the epidemic variety recorded in connection with French garrisons, and to thyroiditis occurring as a complication or sequel of acute and subacute rheumatism, and also of ague. The present case, from the fact that it succeeded upon erythema nodosum, might be considered to belong to the rheumatic variety, but no other rheumatic phenomenon was observed, and its severity was greater than that of the recorded rheumatic cases, the duration of which in their acute phase was not longer than forty-eight hours. On the whole, it seemed best to place the present case provisionally in Lucke's idiopathic group, and to accentuate its association with slight nasal catarrh, and sequence on exposure to cold when in an anæmic condition. (British Med. Journal, Dec. 17, p. 1333.)

Scarlatina and Bronchitis among Children.—*Antipyrin in.*—Friedlander, of Russia, reports fourteen cases of scarlatina, all of whom recovered under the use of antipyrin in doses of nine grains once to three times in twenty-four hours. Profuse perspiration, fall of temperature, and in nearly all cases refreshing sleep of two hours, followed the use of the drug. The dosage was according to age, the maximum dose is that stated. In acute bronchitis nine grains of antipyrin sufficed to influence

children under two years of age favourably for twenty hours; while thirteen grains, with children under five years of age, were sufficient to lower temperature for twelve or fifteen hours; this dose was generally given twice in twenty-four hours. Profuse perspiration, lessened cough, sleep, and general improvement followed. During convalescence, half the doses given during the height of the disease were used. In addition, the following was found useful:—℞. Caffein, gr. $\frac{9}{10}$ to gr. 3; sodii bicarb. gr. 23 to gr. 45; aquæ fœniculi ℥15; syr. ipecac. ℥7½. M. Sig. One-half to one teaspoonful every half-hour or every two hours (Medical News, Oct. 8, p. 423.)

Scarlatina Bacillus.—(*Second Interim Report of the Committee of the Edinburgh Medico-Chirurgical Society, presented at the Society's Meeting, on Oct.* 5, 1887.)—Since submitting to the Society the preliminary report, your Committee have further prosecuted the investigation of facts relating to Mr. Edington's paper on the nature of the contagium of scarlet fever. The Committee have now collected a considerable amount of evidence bearing on the several points under discussion. While, however, the facts before them are of considerable importance, they do not as yet feel themselves in a position to present a final report. The following is a summary of their work. 1. *Microscopical Examination of the Blood.*—Blood from ten typical cases of scarlatina on or before the third day of the disease was examined microscopically for the presence of micro-organisms. In this part of the investigations, forty-four specimens were examined under the microscope, with the result that in the blood of one patient bacilli and micrococci were found, both in small numbers; in that of two patients, bacilli and micrococci were found, the former in very small, the latter in moderate, numbers; in that of four cases micrococci alone were found, and in the remaining three cases no micro-organisms could be detected. 2. *Cultivation Experiments with the Blood.*—The blood was taken from nine typical cases of the disease on or before the third day. In four of these cases bacilli and micrococci appeared in the culture material; in two micrococci alone, and in three a negative result was obtained. It is worthy of notice that the cases in which the microscopic observation failed to discover micro-organisms only in one instance corresponded with those in which cultivation experiments failed; so that, taking the nineteen observations together, evidence of the existence of organisms was obtained in thirteen; or, taking the series of ten cases to which those observations refer, evidence of a positive nature was obtained in nine of them. The Committee are not yet in a position to describe all these forms of microbes, but they are at present engaged in the investigation of the nature of the several organisms. 3. *Cultivation Experiments*

with Desquamation.—One typical case was examined with negative results. 4. Several experiments were performed on calves with the bacillus scarlatinæ supplied by Mr. Edington. These consisted of an inoculation experiment, by subcutaneous injection and scarification, with this material; a feeding experiment with the same; and a combined feeding and inoculation experiment. In each case the result was negative. 5. In conjunction with Professor McFadyean, of the Royal Dick Veterinary College, to whom the thanks of the Committee are due, three experiments were performed, in which it was attempted to induce scarlatina in calves by injecting scarlatinal blood in two cases, and by feeding with desquamated scales in the third. The materials were from typical cases of the disease. These experiments also gave negative results. 6. The Committee feel warranted in expressing their belief that the bacillus scarlatinæ of Edington is not, as suggested by some observers, the bacillus in eczema (Smith), the bacillus butyris, nor the bacillus subtilis. They have, however, not yet been able to compare it with certain other forms of bacillus which it is said to resemble; for example, the bacillus epidermidis, the bacillus of acute rheumatism (Mantle), and the bacillus found in the skin in erythema marginatum (Mantle). 7. They believe that they have definitely ascertained the fact that the micro-organism, described by Mr. Edington under the name of the "streptococcus rubiginosus," is morphologically identical with the streptococccus scarlatinæ of Klein. The value of this identification is emphasised by the facts as to inoculation experiments described by Mr. Edington in a letter appended to this report. In conclusion, your Committee beg to state: (1) That they find that an organism resembling that described by Mr. Edington as bacillus scarlatinæ is, in a certain proportion of cases, present in the blood taken with due precautions from scarlatinal patients; (2) that they believe that the streptococcus scarlatinæ of Klein is identical with the streptococcus rubiginosus of Edington; (3) that they have as yet failed to corroborate the conclusions arrived at by Mr. Edington as to the pathogenetic value of the bacillus scarlatinæ. The Committee desire to obtain the sanction of the Society to continue the investigation, particularly as to (*a*) the morphology of the several organisms; (*b*) the susceptibility of various animals to infection with scarlatinal blood and with the various organisms, their investigations so far having led them to doubt whether calves are susceptible to the action of human scarlatinal poison. They have, therefore, to ask the sanction of the Society for such further expenditure as this fresh line of experimentation may demand.—Signed by T. Grainger Stewart, Convener, James Carmichael, G. Sims Woodhead, Robert W. Philip, and Arthur W. Hare. (British Med. Journal, Oct. 15, p. 830.)

Stenocarpine (or Gleditschine).—[The following note appears in Dr. Bartholow's report upon Therapeutics in the American Journal of Medical Sciences for January.] An explanation of our abstracts of papers concerning the newly invented alkaloid, said to be obtained from the leaves of the "tear blanket tree," may perhaps be due to our readers. In the summary of the last issue of this journal there appeared abstracts of two papers published in the Medical Record of the previous month—the first of these by Dr. Claiborne, giving an account of the new marvel, including the incidents of its discovery; and the second by Dr. H. Knapp, consisting of a characteristically elaborate and full investigation of the new analgesic from the physiological stand-point chiefly. (See *Retrospect*, vol. xcvi, p. 101.) When these investigations appeared suspicions were soon aroused, and it was suggested that precisely similar effects were produced by a combination of cocaine and atropine, and chemical examination of the solution confirmed this view of the origin of the new alkaloid. That medical journalists and practitioners should be deceived by articles appearing in contemporaries is not surprising, since they must accept as true reports of experimental and clinical work, not on their face improbable. Especially in this era of marvels, who can set bounds to discovery, or limit the results of applied science? If the alleged new alkaloid is finally shown to be fraudulent, we may obtain a few crumbs of comfort, at least, in the demonstration of the analgesic and hypnotic action of the combination. (American Journal of Med. Sciences, Jan., p. 71.)

Typhoid Fever.—*Treatment.*—Dr. Osler believes a plan of armed expectancy to be, in the present state of our knowledge, the most rational. The majority of the cases require little or no medicinal treatment. The routine of a restricted diet under the watchful care of an intelligent nurse, meets the *indicatio morbi*. No initial purge is given, as the cases are never brought to hospital very early, and constipation is not dreaded. An acid mixture is sometimes ordered, or dilute hydrochloric acid is added to the water, which is given freely. As it is possible that the defective elimination of the products of regressive tissue changes may be, in part at least, the cause of the so-called typhoid symptoms, every effort is made to keep active the skin and kidneys. Repeated spongings and an abundance of fresh cool water to drink, answer the purpose. A milk diet is ordered—about three pints in the twenty-four hours. Very exceptionally it has to be artificially prepared. An examination of the stools will often indicate if too much milk is taken, or if it is not digested. Warm milk is less apt to produce flatulence. Broths and beaten-up eggs are allowed in mild cases. When the fever reaches 103°—104°, the spongings are more frequently used. If it rises higher—104°—105°—the wet pack is ordered,

or a dose of antipyrin or antifebrin, either of which acts promptly. The cold-water treatment is specially indicated in those cases with profoundly ataxic symptoms, though all the features in this state are not due to the pyrexia. For diarrhœa, when excessive, aromatic sulphuric acid, bismuth, or naphthalin is ordered. For tympanites, turpentine stupes, turpentine internally, creasote, or naphthalin. Constipation is disregarded unless it persists longer than seven or eight days, when a saline purge or an enema is ordered. The severe headache of the early stage may demand leeches. Bromide or chloral will usually overcome the troublesome insomnia of certain cases. When there are indications of heart failure, alcohol is given, and, if necessary, in large doses. Camphor, strychnine, and ergot supplement, but cannot replace, alcohol in this condition. Should hemorrhage occur, opium is given and an ice-bag placed on the abdomen. A return to ordinary diet is permitted ten or twelve days after convalescence is established. (Medical News, Dec. 10, p. 679.)

AFFECTIONS OF THE NERVOUS SYSTEM.

CHOREA.—*Arsenic.*—Sir James Sawyer (Birmingham Med. Rev.) says that experience has strengthened his opinion that arsenic in chorea is almost specific. To get the best effects, the remedy must be administered in relatively large and increasing doses. The medicine may be safely "pushed" until it excites irritative vomiting, for some manifestation of the physiological actions of the medicine coincides with the therapeutic effect of the remedy. To a child of 10, with subacute general chorea, he gives 5 minims of Fowler's solution in an ounce of water, thrice daily. In three days the dose is increased to 10 minims; in three days more to 15; in three days more to 20; and so on until the patient is taking 35 minims of the solution, or a little more than a quarter of a grain of arsenious acid, thrice daily. From the commencement of the treatment, the choreic movements gradually subside in severity, in frequency, and in extent of distribution; and, when the large dose of more than half a drachm of Fowler's solution is attained, the movements entirely cease, and a little vomiting and stomach-ache warn us that we have reached the earlier physiological manifestations of our remedy. We then withdraw the drug altogether for two days. Afterwards, for a few days, we give 10 or 15 minims of the solution; then the remedy is finally discontinued. The child remains well. After a fortnight's further observation, she is dismissed from our care, cured. In the chorea of adults he employs similar treatment. Arsenic succeeds in the chorea of gravid women, which is a formidable affection. He seldom finds it necessary to use calma-

tives and soporifics in severe cases of the disorder. In chronic chorea, arsenic in large doses will cure when arsenic in small doses has been abandoned as useless. The more obstinate forms of the affection often pass from doctor to doctor without benefit. In these cases also arsenic rarely fails if freely given. (Practitioner, March, p. 217.)

Chorea.—Antipyrin.—In a communication that recently appeared (Revue de Thérapeutique) M. Legroux gives the results obtained from the use of antipyrin in chorea. By the treatment hitherto pursued, the average duration of the cases of chorea has been sixty days according to MM. Sée and Rogers, and ninety days according to Cadet de Gassicourt, but in the treatment by antipyrin Legroux finds that the average duration is about sixteen days, the minimum being six, and the maximum twenty-seven days. The mode of administering antipyrin is simple. In twenty grammes (about six drachms) of syrup of bitter orange (French codex) he dissolves one gramme (fifteen and a half grains) of purified antipyrin. Three doses of this size are given in the course of twenty-four hours. (American Journal of Med. Sciences, March, p. 283.)

Diabetic Coma.—Lepine (Rev. de Méd., No. 3, 224) does not believe that either acetone or diacetic acid is the cause of the coma occurring in the course of diabetes, but considers it due to lessened alkalinity of the blood. Stadelmann determined that there was an acid actually produced in diabetes, by which the blood's alkalinity was diminished. This he found in the urine and believed to be crotonic acid, although later researches by others have shown it to be β-oxybutyric acid. He, therefore, treated his cases with large doses of bicarbonate of soda, administering even as much as 100 grm. per diem. If coma had already developed, he recommended large intravenous injections. Although Wolpe followed this plan of treatment without success, Lepine attempted it in one instance, and reports the details of his experiment. In a very severe case of diabetes, in which coma had already developed with a temperature of 96° F., he injected into the median cephalic vein 1·5 litres of water at 104° containing 8 grm. of sodium chloride and 34 grm. of sodium bicarbonate. The temperature immediately rose to 97·5° and the coma became less profound. Twelve hours later he administered a second injection, just before which the blood was found to be nearly neutral, and shortly after which the urine was very decidedly acid but contained no glucose. Again there was temporary improvement, but the patient died some hours later. From the condition of the urine and the blood it is evident that some acid existed in the economy capable of neutralizing an enormous quantity of alkali. Lepine does not think that the combination of this acid with a base is the object to be attained in giving alkaline in-

jections, for the salts produced are also poisonous. The introduction of soda into the economy acts rather as favouring the destruction and elimination of the poisonous acid. We should, therefore, begin the treatment as early as possible in grave cases, in order to prevent the formation of the acid. An exclusive diet of meat is to be avoided in diabetes, since it is in cases receiving this diet that coma is especially liable to develop. (International Journal, Oct., p. 535.)

EPILEPSY.—*Antipyrin.*—M. Geo. Lemoine, Professor *agrégé* at the Faculty of Medicine at Lille has studied the effects of antipyrin in epilepsy. He concludes that antipyrin diminishes the number of epileptic attacks, and even causes them to disappear under the following circumstances:—(1) When the attacks occur at the menstrual period, and are apparently provoked by menstruation; (2) when the patients are subject to neuralgia and migraine. In every other instance M. Geo. Lemoine believes that antipyrin produces merely transient effects. (British Medical Journal, Feb. 11, p. 323.)

KNEE-JERK.—*Jendrassik's and Other Methods of Eliciting it.*—Cases now and then occur in which, owing to there being no concomitant symptoms of disease, a doubt arises whether an observed absence of knee-jerk is due to a pathological cause or to some imperfection in the examination. That there is a great danger of fallacy arising from the latter cause I have reason to know, as it has happened to me in a large number of cases to discover the presence of knee-jerk, which had been thought to be absent. But there is a far more important proof of the liability to mistake in examination. Various observations of the knee-jerk have been made by independent examiners upon large numbers of individuals, and they have put on record that the knee-jerk has been absent (not from pathological cause, but as a natural or physiological peculiarity) in a certain percentage of the examined. But this percentage has varied in different hands from $\frac{1}{25}$th per cent. to nearly 5 per cent.—a discrepancy carrying with it, I think, sufficient proof of a very large amount of error of observation. Within the last two years a mode of examination has been introduced which is calculated to reduce this source of fallacy to a minimum. Dr. Jendrassik's method is to direct the patient, seated on a table with the bared legs dangling, to link the bent fingers of one hand in those of the other and pull energetically as though endeavouring to tear them asunder. Whilst this is being done the ligamentum patellæ is struck. One thousand men of different ages, partly sound and partly sick (recognised cases of nervous disease being excepted), were taken, and the state of the knee-jerk observed. By the ordinary method nine showed very weak reflex; by the Jendrassik or arm-extension method the contraction in these was always strong. The jerk failed on one side

in six; in these it was also weak on the other side; on both sides the contraction could be easily brought out by the arm-tension method. In sixteen cases the reflex could not be got out on either side by the ordinary method. Out of these sixteen, in fifteen he succeeded by the arm method in evoking the reflex, whilst in one he completely failed—but this was a patient with diabetes, in which disease examination shows that the reflex is frequently absent. A method to which I drew attention several years ago is very convenient, and its advantage probably depends upon the same principle as is concerned in the Jendrassik mode—viz., a state of artificially increased muscular tension. The patient (seated) is directed to plant his foot firmly down at such a distance that the leg forms a little more than a right angle with the thigh. Whilst the observer rests the palm of his left hand upon the patient's thigh he strikes the ligamentum patellæ about an eighth of an inch below the knee cap. The quadriceps muscle can be felt, and if the skin is exposed can be seen to contract more or less vigorously in response. I constantly employ this method in the first instance in the case of females, as no disturbance of the dress is required, the contraction of the muscle where the response is present being plainly to be felt through it. But this method, like all the others, is not infallible, and requires checking. As a rule, a percussion hammer is the best means of evoking the reflex; in a small minority this will entirely fail, and then it will probably be found that the ulnar edge of the hand or some still thicker implement will succeed. The method of Jendrassik is calculated to reduce to a minimum the chance of error, and should always be employed before it is finally concluded that the knee-jerk is absent in a particular case. To make a mistake on this point is now of much more serious consequence than it was when it used to be believed by some that in a considerable percentage of the healthy the knee-jerk is naturally absent. My opinion is, then, that if the most careful examination fails to elicit the knee-jerk (there being no structural change or peculiarity about the knee-joint itself to interfere with the process) we have to do with something of pathological import. Examination may then show that there are other symptoms which serve to confirm this opinion, or it is possible that absence of the knee-jerk may stand alone as evidence of some organic change, either of a temporary or permanent character. After diphtheria, for example, absence of this reflex may be found as the only objective symptom. It is then but temporary in duration. (Dr. T. Buzzard, p. 133; and Lancet, Jan. 28, p. 159.)

MIGRAINE.—*Acids in the Paroxysm of.*—The acid used is not of much consequence; citric or nitro-hydrochloric are equally good; the only point is that the dose must be sufficiently large, especially if, as is often the case, the headache is going on dur-

ing the "alkaline tide" of digestion. A dose I commonly find successful is forty to sixty minims of dilute nitro-hydrochloric acid in a tumbler of water, one half to be taken at once, and the rest in thirty or forty minutes; the headache is generally much better within an hour, and quite gone within an hour and a half from the first dose. If the urine is alkaline, or very slightly acid before this treatment is begun, or if the patient has previously been taking alkalies, a third dose of twenty minims of the acid may be necessary; but I rarely have to go beyond one drachm of nitro-hydrochloric acid, and I have given some notes in the Journal of Physiology of the effects of such a dose on the uric acid excretion. An equivalent dose of citric acid, taken as strong lemonade, will do as well, or, so far as I know, of any acid that may be preferred, provided it raises the acidity of the urine. It is also possible to reverse the process, and by giving alkalies, to bring the headache on or increase it. (A. Haig, M.B., p. 156.)

NEURASTHENIA.—*The Tendon Reflexes in.*—In conditions of neurasthenia the tendon reflexes are almost always in excess; and in the functional paraplegia which is so common in this obscure condition of the nervous system, and so much resembles the effects of bilateral sclerosis, there is often an extraordinary liveliness of knee jerk accompanied by ankle clonus. It is remarkable, and, to a certain extent, opposed to the idea that in the tendon phenomenon we have to do with a true reflex, that along with this undue briskness of knee jerk there is very often indeed a total absence of plantar reflex. No movement of the leg muscles occurs when the sole is tickled. So common is this association that I have long been in the habit of urging that in a case of paraplegia without sensory symptoms increased knee jerk with absent plantar reflex should always lead one to suspect a functional condition. It is not conclusive, as in a certain phase of myelitis the same association might be found. Other circumstances, however, and especially sensory and trophic symptoms, would in such a case render confusion impossible. The excess of tendon reflex, which is the rule in neurasthenia, often lends useful aid in the diagnosis of the functional character of certain conditions. A patient, for instance, complains of loss of power in the legs, and asserts that the arms are absolutely normal, and yet we find the same exaggeration of reflex at the wrist as we do at the knee. The inference is that we may, as it were, "discount" the latter, and in practice I have found it safe to do so. On the other hand, does inequality of tendon reflex on the two sides exclude the diagnosis of functional lesion? This is an important point. I fear that diagnosis cannot receive aid from it. I have seen patients with considerable inequality of tendon reflex recover their health and strength. But I am certainly disposed to look upon a gradually increasing tendon reflex asso-

ciated with constantly diminishing power as evidence of organic lesion. A very instructive case was lately in hospital. A woman came in complaining of some loss of power in the right leg. The knee jerks were about equal, and there was nothing whatever objective to throw light on the nature of her affection. She had been exposed to great troubles, and her husband was an epileptic. From these and other circumstances I was at first rather disposed to regard the case as one of functional disorder. But gradually the arm lost power, the wrist jerk and knee jerk of that side became excessive, and long before a post-mortem examination confirmed the opinion a diagnosis of gross intracranial disease had been made. The state of reflexes helped us, but was not sufficient of itself to solve the doubt. To turn for a moment to the converse of this, I am disposed to say that in my experience the knee jerk is never lost in neurasthenia. It is never safe, I am sure, to apply the term "hysterical" or "neurasthenic" to a loss of power in the lower extremities accompanied by loss of knee jerk. Not a few cases of Friedreich's—the congenital form of locomotor ataxy—have been diagnosed as hysterical from failure to note this fact. I examined one such case not long ago, which had been sent to Dr. Playfair to undergo the Weir-Mitchell treatment, on the supposition that the condition was hysterical. (Dr. Buzzard, p. 140.)

Paraldehyde as a Hypnotic.—Paraldehyde is comparatively a new hypnotic, and one that promises to be of much interest and value in the treatment of the various causes of wakefulness. It stands in the same rank as chloral, but is much safer, acts quicker and gives a more natural sleep. Several have written in high terms of its utility and safety. Like all new remedies, it is somewhat expensive. The dose is from ʒj to ʒij. The name indicates its oily nature, and this is a difficulty which has to be met in prescribing. It is usually made into a draught by suspending in tragacanth powder, sweetened with syrup. I generally give it with whisky or brandy in the proportion of 1 to 3. The oiliness disappears when mixed with the stimulant, which is I am convinced a most useful adjunct to every hypnotic. In its action it is gradual, and should it fail to produce sleep, it does not excite. Its use is not followed by headache or gastric disturbance, but it continues to be excreted by the lungs for many hours afterwards. This is, by some, considered a great objection. Now it may be and no doubt is an objection, but, as one writer very truly says, "should we not rather look upon the disagreeable breath as a great safeguard against the clandestine use of the drug, and not in the light of an objection?" There is no accumulative principle in paraldehyde, and I have not met with a case of tolerance. It, however, is a much more valuable hypnotic than many of those now in use; for I believe it can be

given with safety and reliance, no matter how abnormal the rhythmical action or other functions of the bodily organs may be. The class of cases where the use of paraldehyde is indicated is a large one, for if we except the insomnia due to acute mental excitement and severe pain, I believe we may employ it in all other instances of disturbed sleep. I would specially recommend it in the insomnia of—(1) simple mania and melancholia; (2) nervousness and hysteria; (3) profound grief or mental anxiety, and in wakefulness attendant on mental or bodily overwork. (Dr. P. W. MacDonald, Bristol Med.-Chir. Journal, Dec., p. 259.)

Paraplegia from Spinal Caries.—*Recovery.*—At the Birmingham and Midland Counties Branch of the British Medical Association on January 27, 1888, Dr. Suckling showed a case in which recovery from complete paraplegia, of over two years' duration, due to spinal caries, had taken place. The patient, a man, aged 22, was admitted into the Workhouse Infirmary in August, 1885. He had lost the use of his right leg three weeks before admission, and a week later that of the left also. When admitted he was completely paraplegic, there being ankle clonus and exaggeration of knee-jerk on both sides, with loss of the abdominal reflexes. The epigastric and cremasteric reflexes were present. There was also analgesia of both lower extremities, but no complete anæsthesia. The seventh dorsal spine was prominent, and tender on percussion. During his stay in bed, which lasted two years and three months, he had four plaster jackets put on, wearing each for about three or four months. He had cystitis and bedsores. At the end of two years and three months he could move his toes, and power gradually returned, till in a month's time he could stand, and in another month could walk. The curvature of the spine had increased very considerably, but there was now no pain or tenderness. There was now no ankle clonus or anæsthesia, and the patient walked perfectly well. (British Med. Journal, Feb. 25, p. 422.)

Tumour of the Spinal Cord Successfully Removed.—At the meeting of the Royal Medical and Chirurgical Society a very interesting case was shown by Dr. W. R. Gowers and Mr. Victor Horsley to the Fellows of the Society. It was that of a gentleman of middle age, who had for more than three years suffered with acute pain in about the middle of the back, just below and inside the lower angle of the left scapula. The spot was very tender as well as painful, but below the region of the fifth nerve there was almost complete anæsthesia as well as complete paraplegia; the accuracy of the delimitation was more distinct on the left side than the right. After some discussion, the diagnosis of tumour of the spinal cord was agreed upon, and Mr. Victor Horsley undertook the operation necessary for its removal.

On June 9th, 1887, the spines and laminæ of the fifth and fourth dorsal vertebræ were removed without laying bare the cause of mischief; but when the greater part of the posterior part of the third vertebra had been removed, a myxoma about the size of a filbert became visible in the spinal canal, lying on the right side, and compressing the spinal cord. This was shelled out without difficulty, and no further new growth was found. The pain was for a time slightly relieved, but again and again recurred with great severity, and the power of motion was only slowly and intermittently regained during the first three or four weeks. The pressure over the wound was treated by a pad and strong jacket; the local pain gradually diminished; the motor power gradually returned to the lower parts; and, after seven months, the use of the lower limbs, though a little stiff, had become almost natural, and the remains of the laminæ had come so near together in the well-healed cicatrix that any further external support seemed unnecessary. (Brit. Med. Jour., Jan. 28, p. 191.)

URETHAN AS A HYPNOTIC.—*Its Action.*—Dr. Emil Kraepelin contributes an article to the Neurol. Centralblatt (March 1, 1886) on the action of urethan. The reports on this hypnotic have, up to the present, been uniformly favourable. Kraepelin's experience has been of a like character. He has given the drug in about 200 instances. Most of his cases were cases of insanity, but thirty-four instances of various other diseases were included. The dose ranged, as a rule, from 1 to 3 grammes. Occasionally a dose of from 4 to 5 grammes was given. No unpleasant effect on the heart or nervous system, either during the action of the drug or afterwards, was ever noticed. In one case of alcoholic gastric catarrh vomiting was produced by the large dose. The appetite, however, was never in the smallest degree impaired, even by the continuous use of the drug for several weeks. Urethan acts as a genuine hypnotic. Ten or fifteen minutes after taking it a quiet sleep comes on, which lasts for several hours, and from which the patient wakes up without any unpleasant feeling in the head. Should the sleep be interrupted by any external cause, the patient generally falls off to sleep again as soon as the disturbance is removed. The certainty of the drug's action depends upon the cause of the sleeplessness and on the dose. It is not a hypnotic of great energy, and in cases of great excitement it is of little value. In such cases it is far inferior to paraldehyde. In delirium tremens especially it failed. Perhaps, however, if higher doses were given in these cases the result might have been more satisfactory. For the relief of pain the author does not consider it of any use whatever. In cases of phthisis the combination of a small quantity of morphin was found useful. When given in doses of 1 gramme it acted sufficiently in 54 per cent. When the dose was 3 grammes, the result

was favourable in 70 per cent. The form of mental ailment in most cases was general paralysis or melancholia. In the excited stages of general paralysis, small doses were frequently altogether without effect. The larger doses in such cases gave a satisfactory result in 60 per cent. of the cases. In the higher degrees of excitement—in mania, for example—as well as delirium tremens, the author found himself obliged to have recourse to paraldehyde. In melancholia the drug gave better results—it secured quiet sleep in 77 per cent. The patients were all women, and many of them were very anæmic. Amongst the most favourable indications for urethan the author places exhausting diseases, feverishness, and lowered nutrition. One great advantage this drug has over paraldehyde is that it is not so unpleasant to the smell or taste, and it can, if necessary, be taken in simple solution, without any flavouring or disguising agent. (Dr. Ringrose Atkins's Report, Dublin Journal of Medical Science, Oct., p. 316.)

Writers' Cramp.—*Note on the Successful Treatment of.*—I think it right to put on record a remarkable case of the successful treatment of that hitherto most intractable affection, writers' cramp, by Mr. Julius Wolff, 54, Welbeck Street, London. I put a lady under his care in May last. At that time very great pain and distressing cramp attended all her efforts at writing, so much so as to render the idea of writing very painfully distressing. Mr. Wolff put in force the skilful kinetic treatment already eulogised in your columns by Dr. de Watteville. She returned home in the month of July, cured, and since then has not lost any of the power restored to her hand and arm. The success of this method of treatment in this instance was equalled by that of others which I saw progressing towards convalescence, under Mr. Wolff's care at the same time. The treatment is a valuable addition to our therapeutic resources, and a great boon to many whose distressing ailment previously admitted of no relief. (Dr. Alex. Knight, of Clones, Ireland, British Medical Journal, Oct. 29, p. 939.)

AFFECTIONS OF THE CIRCULATORY SYSTEM.

Aortic Disease of Rheumatic Origin.—*Treatment.*—1. In all cases manifesting signs of disease at the aortic orifice, whether obstructive or regurgitant, if there be an immediate association with acute or subacute rheumatism, it is of the first importance to counsel complete rest in bed. The observance of such rest is sometimes sufficient to allow a complete compensation to be brought about. 2. In such cases digitalis and other special cardiac tonics should not, as a rule, be employed until time has

been given for observation, and for the use of appropriate means to subserve general nutrition. 3. In cases in which there is reason to believe that the lesion is chronic, in relation with a remote attack of rheumatic fever, with no evidence of the recent existence of subacute rheumatism, the administration of digitalis, convallaria, or caffeine is indicated, but a prolonged course of any or either of these agents is undesirable. It is better that they be administered for periods of one or two weeks, and then that general tonics be alone prescribed; for, the energy of the ventricles being once increased, this may be maintained without the aid of agents specially influencing the cardiac muscular fibre; and in aortic disease agents which considerably modify the rhythm of the heart are not without danger. 4. In the case of a young subject in whom there is no evident manifestation of rheumatism, and yet a very low tension of pulse, which cardiac tonics fail to modify, it is probable that rheumatic endocarditis is in progress, and absolute rest with the administration of the salicylates should be counselled. (Dr. A. Ernest Sansom, p. 157.)

Cardiac Relations of Chorea.—The heart symptoms of chorea demand special consideration as among the most important and peculiar features of the disease. Chorea is rarely a fatal disease in children, and hundreds of cases may be treated without a death. By far the most serious fact in the clinical history of the disease is the occurrence of endocarditis; but here the danger is remote, not immediate, and lies in the changes which an acute valvulitis may initiate. A satisfactory study of the cardiac relations of chorea must embrace the condition during the attack, and the subsequent heart history after a period of years. The first question has engaged the attention of many workers, and in the October number of this journal Dr. William Osler, of Philadelphia, works out the second on a scale not hitherto attempted. He has carefully re-examined 110 of the choreic cases treated at the Infirmary for Nervous Diseases between 1876 and March, 1885, the examination in every case having been made more than two years subsequent to the attack of chorea. In 43 cases the heart was normal, in 54 there were signs of organic disease, and in 13 there was functional disturbance. A study of these cases, Dr. Osler thinks, justifies the following conclusions: 1. That in a considerable proportion of cases of chorea—much larger than has hitherto been supposed—the complicating endocarditis lays the foundation of organic heart disease. 2. In a majority of the cases the cardiac affection is dependent on rheumatism, and cannot be regarded as in any way associated with it; unless, indeed, we hold with Bouillaud, that in the disease "chez les jeunes sujets, le cœur se comporte comme une articulation." 3. As the presence of an apex systolic murmur in chorea is usually an indi-

cation of the existence of mitral valvulitis, as much care should be exercised in this condition as in the acute endocarditis of rheumatism. Rest, avoidance of excitement, and care in convalescence, may do much to limit a valvulitis, and obviate, possibly, the liability to those chronic nutritional changes in the valves wherein lies, after all, the main danger. (Editor's Supplement, American Journal of Med. Sciences, Oct. 1887.)

Chlorosis in Girls.—*Directions for Treatment; and Prescription.*—On first waking in the morning, sip a quarter of a pint of cold water. On rising take a tepid sponge bath; dry quickly, and follow with a brisk towelling. Clothe warmly and loosely; see that there is no constriction of the body or of the limbs. Have four simple, but liberal, meals daily, arrranged after this fashion: Breakfast, eight to nine—whole-meal bread and butter, with one or two eggs or some broiled fresh fish, or the wing of a cold chicken or pheasant, and towards the close of the meal half a pint of equal parts of milk and tea, not infused longer than five minutes. Lunch or dinner, one to two—fresh tenderly-dressed meat, bread, potato, well-boiled green vegetable, and any sort of simple farinaceous pudding or of cooked fruit, preferably apple; drink one glass of Burgundy alone or in half a tumblerful of water. Tea, from four to five—whole-meal bread and butter, with a cup of equal parts of tea and milk. Dinner or supper, from seven to eight—this should resemble the mid-day meal, but should be less in quantity, Nothing is to be taken after this meal, nothing between meals, and nothing but what is here set down. Walk at least half an hour twice daily, and as much more as strength and convenience will permit. Retire to bed about ten, and repeat the sponging and towelling. See that your bedroom is cool and well ventilated. Lead a simple, regular, active, occupied, purposive life; and do not notice or distrust yourself. With such instructions modified according to individual peculiarities, I prescribe an old-fashioned ferruginous cathartic, to be taken twice a day, about eleven and six. Usually it is an acid mixture, designed somewhat as follows:—Ferri sulphatis, gr. xxiv.; magnes. sulph., ℥ vi.; acid. sulph. arom., ℥ i.; tinct. zingiberis, ℥ ii.; infus. gent. co. vel quassiæ, ℨ viii.; Fiat. mist. Sig. One-sixth part twice daily, about eleven and six. Occasionally this acid mixture produces sickness, dries the skin, and is otherwise ill borne. In such cases I prescribe an alkaline cathartic mixture:—Ferri sulphat., gr. xxiv.; sodii bicarbonat., ℥ ii.; sodii sulphat., ℥ vi.; tinct. zingiberis, ℥ ii.; spts. chlorofor., ℥ i.; inf. quassiæ, ℨ viii. Fiat. mist. Sig. One-sixth part twice daily, about eleven and six. Sometimes neither mixture agrees, and then I prescribe sulphate of iron in pills with meals, and a saline aperient on first waking in the morning. (Sir Andrew Clark, p. 174.)

Paracentesis Pericardii.—The pericardium, when distended with fluid, is as accessible as the pleura; and I am able to look back upon two cases in which, in the presence of imminent death from suffocation, I have in an exactly similar manner tapped the pericardium, and have so restored dying patients to life. And I am by no means the only one to whom it has been permitted to do this. Since the publication of my first case, I have read of several such—some successful, others not; and I would urge you strongly, when you have reason to believe that a patient is about to die, or, is even in danger of dying, from dropsical effusion into the pericardium, to lay aside all dependence upon medicine, and to tap that sac, just as you would the pleura, without fear or hesitation. Necessarily, the anatomical relations of the parts must be carefully considered; and that, not only as we know them to exist in health, but also as we believe them to be relatively altered by the disease. Considering the fixity of the cardiac base and the mobility of its apex, we may fairly calculate that, when the cavity of the pericardium is distended with fluid, the apex of the heart will be both elevated and tilted forward—a change by which the auricle, its most vulnerable part, and whose tender walls might easily be pierced by a trocar, will be moved out of the way, and the more impenetrable wall of the ventricle be presented to its track. In my cases, after carefully mapping out the area of cardiac dulness, and ascertaining the point of apex-beat, I have inserted the trocar on the upper surface of the fourth rib to the left of the sternum, and advancing it steadily upwards and from left to right until the impulse of the heart could be felt, I have then withdrawn it, leaving the cannula in position, and have succeeded in emptying the cavity so far, at any rate, as to restore the power of normal movement to the heart; to enable it to resume something like control over the circulation, and to restore to the patient the power once more to fill the lungs with air. In the performance of this operation, I do not claim any originality. Trousseau recommended and practised it years ago; but, in two points, I desire to urge upon you the advisability of modifying the teaching of Trousseau. The aspirator was not known at the time of which I am speaking, and Trousseau recommended free incision, and the washing out of the emptied pericardium with an iodised or other irritant fluid; let me advise you to be content with simple aspiration, repeated if need be, but to abandon the iodised washing, which I believe to be both unnecessary and capable of doing harm. (Mr. C. G. Wheelhouse, British Med. Journal, Nov. 26, p. 1142.)

Spartein in Cardiac Diseases.—Maslowsky (Rouss. Med., No. 13, 1887), at the clinic of Prof. Kouznetzow, to test the conclusions of Sée, has experimented with spartein in cases of

uncompensated cardiac lesions. He finds that spartein in moderate doses increases the action of the heart, and that the effects are quickly produced. Contrary to Sée, he does not find that the heart-beats are made entirely regular. The quantity of urine is increased. No cumulative effects are observed. (Dr. Bartholow's Report in American Journal Jan., p. 72.)

Strophanthus in Cardiac Diseases.—*Its Advantages.*—Prof. Langaard gives the following summary of the action of strophanthus, summing up the different statements already published. (1) All observers speak highly of the beneficial action of the drug upon the heart. The contraction of that organ is stronger and more vigorous; the pulse fuller, more regular, and slower. (2) The different disturbances of respiration—dyspnœa and asthmatic affections, as also the distress and anxiety of the patient, are more relieved by strophanthus than by digitalis. (3) The secretion of urine is often enormously increased, and the œdema disappears. This effect is not only produced in cases of heart disease, but also in morbus Brightii, in such a high degree indeed that strophanthus may in this disease entirely supersede digitalis. (4) The unpleasant effects often following the use of digitalis, such as loss of appetite, nausea, and vomiting, which sometimes necessitate its discontinuance, are very rarely observed with strophanthus. (5) The remedy does not possess any cumulative effect. The absence of this property enables physicians to administer it for several weeks without interruption, which is not possible with digitalis without producing toxic effects. (6) The effect is very rapidly produced, but is not so lasting as that of digitalis. (7) Strophanthus is to be preferred to digitalis when a quick effect is desired; where great dyspnœa, distress, and anxiety are suffered by the patients, which digitalis does not influence; when a sustained stimulation of the mechanical action of the heart is necessary; and when digitalis cannot be given on account of its cumulative action. (Practitioner, Jan., p. 59.)

Strophanthus.—Professor Drasche, in a paper which he read before the Imperial Royal Society of Physicians of Vienna, communicated the results of his experiments with the tincture of strophanthus. He had used the strophanthus for three months in the General Hospital, and administered twice a day twenty drops of an alcoholic tincture with an equal quantity of laurel water. After the administration of the drug in this dose (half the maximum dose of Fraser), he observed a constant decrease in the frequency of the pulsations; a few minutes after the administration, there was sometimes a decrease in the number of the pulsations from eight to twelve in the minute; in other cases this effect was not produced till half an hour after the drug had been administered. This slowing of the pulse lasted for some hours. Prof. Drasche had tried strophanthus in various febrile

diseases, such as pneumonia, typhoid fever, acute phthisis, and so on, and had always observed a retardation of the pulse-beats as well as a slight fall of the temperature, which, however, rapidly rose again. In the case of a woman suffering from nervous palpitations, he gave from 10 to 20 drops daily for three weeks (the number of the pulsations was from 150 to 190 in the minute) without noticing a cumulative effect. The number of the pulse-beats, nevertheless, increased until twenty drops were administered twice a day, when the number of the pulsations was diminished by twenty beats, and the action of the heart became quiet. This effect was constant, and in spite of the six weeks' administration, no disturbance of digestion occurred. In a case of Basedow's disease with tumultuous action of the heart, he succeeded, by giving twenty drops of the tincture of the seeds of strophanthus, in obtaining a retardation of the pulsations as well as an improvement in the regularity of the pulse. Prof. Drasche, moreover, had tried the tincture of strophanthus in thirty cases of failure of the heart with serious disturbance of compensation, and in that case also with a proportionately good effect. The palpitations and the feeling of anxiety very quickly disappeared; the accelerated action of the heart decreased more speedily than after the use of digitalis or adonis, so that the patients always asked for the strophanthus tincture. Prof. Drasche finally also stated that similar experiments had been made with success in Prof. von Bamberger's *clinique;* the latter gave from ten to twenty drops daily. (British Med. Journal, Oct. 8, p. 798.)

Strophanthus.—Hochhaus, in the clinic of Fürbringer, has made an extended investigation on the value of strophanthus, and says: In sixty cases I found that in valvular lesions, with compensation, tincture of strophanthus lessens, invigorates, and regulates cardiac action, relieving dyspnœa and œdema. Digitalis is generally effective in cases benefited by strophanthus, but there are cases not benefited by digitalis which improve with strophanthus. In comparison between the action of digitalis and strophanthus, digitalis affects the heart more promptly; strophanthus relieves dyspnœa, caused by cardiac disease, more rapidly and effectively than does digitalis. The indications for the use of strophanthus are within more narrow limits than those of digitalis; we have not yet determined clearly these conditions. In degeneration of the heart-muscle, with small, frequent irregular pulse and marked dyspnœa, strophanthus is very effective in relieving dyspnœa, and improved cardiac action follows. In acute and chronic nephritis, the tincture is less effectual than in other cases; dyspnœa is frequently relieved without the production of diuresis, or lessening the œdema. Œdema, from cachexia, is sometimes relieved by the remedy. Disturbances of digestion are often produced, which generally subside if the drug be con-

tinued. Regarding dosage, from three to six drops of the tincture should be given in a teaspoonful of water or wine, and when needed, syrup or liquorice may be added, in the beginning of treatment, and the amount increased two drops with each dose daily until distinct effects are evident, when the dose last given should be continued ; it is not advisable to go higher than from three to twenty drops. From three to five drops is sufficient for a child. The effect generally appears in two or three days, and endures for one or two weeks, although great variations on this point are observed. A cumulative action was not observed. Strophanthus is not of great and peculiar value, but has a useful action in aiding and supplementing digitalis. (Medical News, Dec. 17, p. 713.)

Strophanthus.—I have been using strophanthus for several months at the Birmingham Workhouse Infirmary, and with little success. At first I thought that it might be due to my using a badly-prepared tincture ; and to some extent this was the case, for I found that the tincture prepared by Messrs. Burroughs and Wellcome was far superior to that obtained from several other chemists. In all my cases hitherto I have found that, though tincture of strophanthus has done some good, yet the substitution of an equal quantity of tincture of digitalis has been attended with marked benefit, and I have ceased to prescribe strophanthus where it is important to obtain an immediate improvement. I have found that vomiting occurs from strophanthus quite as frequently as from digitalis ; and in my opinion strophanthus, at any rate in the dose and preparation at present in vogue, is decidedly inferior to digitalis in its action in heart affections. (Dr. C. W. Suckling, British Medical Journal, Nov. 19, p. 1100.)

Thoracic Aneurism.—*Localized Sweating in.*—Any record of the occurrence of localized unilateral sweating in thoracic aneurism is unknown to me. The cause is not very difficult to conjecture, that with such a large tumour pressing upon and eroding the dorsal vertebræ there must be pressure upon the origin of the intercostal nerves is safe to assume. But it is a question in physiology whether ordinary irritation of a mixed spinal nerve can produce sweating in the distribution of that nerve. Physiologists hold that inasmuch as there is a sweating centre in the medulla oblongata from which fibres are sent along the ordinary mixed nerves, sweating can be induced by direct or reflex stimulation of these nerves in an animal. On these grounds we may assume that the sweating of our patient is the result either of direct or reflex stimulation of the intercostal nerves which supply the area over which the sweating was observed. Moreover, this area corresponded to the distribution of the nerves nearest the centre of the tumour, and for that

reason the structures most likely to be subject to pressure. The other nervous symptoms I am inclined to attribute to anæmia of the nerve centres induced by the regurgitation at the aortic orifice, an effect not uncommonly observed in connection with that condition. (Dr. R. L. MacDonnell, p. 166.)

AFFECTIONS OF THE RESPIRATORY SYSTEM.

Acute Inflammations of the Lung.—*Their Relation to Bacterial Infection.*—1. The bacteria found in the different forms of pulmonary inflammation are to be regarded as the cause of these, and this conclusion is completely justified on these grounds; definite, well-characterised species of bacteria not only occur constantly in acute pulmonary inflammations, but can be demonstrated in greatest abundance and activity in the earlier stages of the inflammation; they have been isolated, cultivated, and when introduced into certain animals have produced processes which, taking them *in toto*, correspond to inflammation of the lung in man. 2. The pneumonic virus is no unity, inasmuch as acute pulmonary inflammations, even croupous pneumonia proper, can be produced by different kinds of bacteria. In this the pneumonias recall acute inflammation of the connective tissue, in which also several species of organisms occur. 3. The separation of pneumonias into lobar and lobular, croupous and non-croupous, has an anatomical but no etiological significance. Moreover, the so-called secondary pneumonias, etiologically considered, are often not secondary. 4. The diplococcus pneumoniæ is to be regarded as the most frequent exciter of inflammation of the lungs. Friedländer's bacillus can only rarely be the cause if we may trust the author's results and generalise upon them. Still that Friedländer's organism does cause croupous pneumonia we must consider, he thinks, definitely proved. As regards the question of pneumonia being dependent on catching cold (erkältung), Weichselbaum would allow for that cause only a possible predisposing effect. (Prof. A. Weichselbaum, of Vienna, Edinburgh Med. Journal, Nov., p. 430.)

Bronchitis.—*The Use of the Nitrites in.*—Nitrite of amyl and nitrite of ethyl have not only the inconvenience of requiring alcohol to dissolve them, but also the great disadvantage of being very unstable substances, spontaneously undergoing change and deteriorating in the course of time. These inconveniences are fully recognised in the case of nitrite of ethyl, as it occurs in the spiritus ætheris nitrosi of the Pharmacopœia, which, however, has continued, notwithstanding, to be a favourite and widely used remedy. It is probable that the favour with which it regarded is due not only to the action on the circulation whic

it shares with the other nitrites, and to its being an alcoholic preparation, but also to the previously unrecognised influence which it exerts on dyspnœa, when it is administered, as it so frequently is, in the treatment of bronchial catarrh. The power of these substances to control bronchial spasm, whether that show itself in the orthopnœa of an asthmatic paroxysm or in the relatively slight dyspnœa of ordinary bronchitis, will probably lead to their being more largely used than they have hitherto been in the treatment of disease. Where their administration is successful in removing the auscultatory evidences of such spasm, it is difficult to imagine anything more convincing of the influence that may be exerted upon the conditions of disease by pharmacological agencies. The observer has presented to him a patient in whose thorax a continuous succession of varying sounds is being produced, and whose condition is one of distress, and sometimes of intense suffering and anxiety; within a few moments after a nitrite has been administered the conditions are entirely changed; the endless succession of noisy breath-accompaniments gives place to an almost complete silence, in which only the subdued quiet of the normal respiratory sounds is audible; and, at the same time, the distress of dyspnœa, or, it may be, the intense suffering and anxiety of urgent orthopnœa are entirely removed. (Professor T. R. Fraser, Edinburgh, American Journal, Feb., p. 134.)

Coryza.—*A Snuff for.*—M. Pierre Vigier considers a powder composed of equal parts of powdered starch, boric acid, and tincture of benzoin to possess certain advantages, especially that of not being too light. The mixture should be triturated for a moment, then dried with a gentle heat, and put into a box, without pushing the powdering process too far. The rapidity of the effect is proportionate to the amount of the powder used and the frequency with which it is employed. (New York Med. Journal, Dec. 24, p. 729.)

Diphtheria.—*Early loss of Knee Jerk in.*—1. In a considerable number of cases knee jerk is lost from the first beginning of the disease, and thus affords a valuable means of diagnosis of the nature of the throat affection. 2. The loss of knee jerk is the first evidence of the disease having attacked the nervous system. 3. Absent knee jerk has no influence on the prognosis. (Dr. MacDonnell, p. 141.)

Diphtheria.—Treatment by Frequent Irrigation.—An elaborate paper on the management of diphtheria by Dr. G. Guelpa, is concluded in the issue of October 30th, 1887, of Bulletin Gén. de Thérap. The special point brought forward by the author is "irrigation, the most frequent possible." He has employed a solution of the perchloride of iron for this purpoes,

chiefly from habit, but other solutions—of lime, carbolic acid, boric acid—may, he admits, be quite as efficient—may be more efficient—for the agent used is quite secondary, the main consideration being the frequent irrigation. Dr. Guelpa advocates the early and persistent, and almost continuous application to the parts threatened with an extension of the diphtheritic process. Cauterizations are negatived. Perchloride of iron solutions, 5 to 10 per 1000 in strength, have proved most successful in a long series of cases of different periods. The irrigations are practised every quarter of an hour during the day, and every half hour at night, in the milder cases with moderate force through the fauces and nares, as is done with the nasal douche; but when the resistance to the passage of the fluid requires it, the hand-ball should be used to pump the fluid through. When irrigation is practised early and efficiently, it is comparatively rare to find the disease spreading to neighbouring parts. It is relatively easy to bear by the patient, and to apply by the attendants. As Dr. Guelpa submits many cases illustrating the utility of the method, there can be little doubt of its value. There are no difficulties in the way. As it is the irrigation rather than the character of the medicament that determines the result, the practitioner has a wide choice of materials, and, hence, those objecting to the disagreeable iron chloride, can employ other medicaments. Probably, those agents having a solvent action, as papaïn, lactic acid, lime, &c., can be used with the expectation of the best results. It is the early, frequent, and copious irrigation that accomplishes the important curative results obtained by Dr. Guelpa's method. (Dr. Bartholow's Report in American Journal, Jan., p. 73.)

Diphtheria.—Oil of Peppermint as a Local Application in.—In diphtheria, the greatest of all desiderata has always been such an antiseptic as this—one which may be fearlessly applied in the greatest quantity and the greatest frequency; which is innocuous, whether it be swallowed during its application, or be respired into the air-passages; and which, by its absorption into the blood, and its ready volatility, is enabled to penetrate to every recess, and be carried through all the tissues. Two cases of typical diphtheria in male adults, part of a small epidemic, some among the victims of which died with its worst features, have been treated solely by applications of oil of peppermint. Both these cases presented multiple ulcers on the fauces, uvula, tonsils, and retro-pharynx; in both cases these patches were covered with ashy-white membrane; and in both they had increased largely in size while under one day's observation, untreated. The pure oil was freely and copiously applied twice daily; the growth of the ulcers ceased, as it seemed, immediately, and on the fourth day in one case, and on the third in the other,

all trace of membrane had vanished, and the ulcers had almost entirely disappeared. Coincidentally, general febrile symptoms present in both departed. Albumen was observed, I may add, in the urine of neither. This is probably to be accounted for by the rapid destruction of the local infection before it had time to prostrate the system by multiplication and damage the kidneys during excretion. These cases afford ground for believing, therefore, that this drug may be also a potent weapon in diphtheria. Recovering so completely and so speedily as they did, their progress resembles neither that of "ordinary" ulcerated pharyngitis, treated or not by the usual means, nor of diphtheria as it has progressed in cases I have seen treated by the inefficient local antiseptics in vogue. (Dr. L. Braddon, Lancet, March 24.)

Emphysema Pulmonum.—In the Berlin Klin. Wochenschrift, Virchow contributes a paper on emphysema pulmonum. He recalls and recommends to the study of the younger members of the profession Laennec's classical and, in all directions, exhaustive exposition of the subject. The opinions of Andral, Louis, and Rokitansky, who supposed that there was a hypertrophy of the lung in some cases, are reviewed, and his own are given. He thinks that often emphysema has its starting-point in early years, and he has observed a remarkable concomitance of what he calls an "albinistic" condition of lung with emphysematous spots. Those emphysematous parts are quite colourless; pigmentation is entirely awanting. Now, no one can believe that when once carbon has been deposited in the lung that it can be removed without ulceration or destruction of tissue. Indeed, the fact that no pigment is to be found in certain portions of the lung can only be explained by supposing that none ever got there. Now, it is only after the fifth year of life that the importation and fixation of carbon takes place abundantly; therefore Virchow believes that this albino condition of lung must date from about that time. When he finds that it is just those spots which are emphysematous, he cannot resist the conclusion that there is some causal connection between them; this must be found in *difficult inspiration;* it cannot be difficult expiration: this would favour rather than otherwise the deposit of carbon. There must be, therefore, in the condition of the afferent tubes, some cause which hinders the entrance of the carbon. Thickenings of the mucous membrane and bronchial walls have formed in these early years, and so narrowed the bronchi, that one can easily believe that the carbon present in the inspired air may be deposited on the superficies of those bronchi, and afterwards removed by the expectoration of catarrhal sputa, so that it never reaches the alveoli. Virchow therefore thinks that many cases of emphysema may date back to very early years, and that there is some anatomical substratum for its occurrence. He is much

inclined with Rokitansky to suppose a sort of substantive unhealthiness of the lung tissue, which gradually increases with years. In short, pathological processes in the lung tissue, even if not microscopically demonstrable, must be at the bottom of emphysema, and that in parts so predisposed, incomplete expiration of and continuous retention of air work together and cause a necrobiosis of the tissues, ending, latterly, in the formation of large rarefied spaces. (Dr. F. Troup's Report in Edinburgh Journal, March, p. 855.)

Intubation of the Larynx.—*Results.*—Dr. Ingals has collected 514 cases, with 134 recoveries, or 26·7 per cent. The greater number of these occurred in his own practice and in that of O'Dwyer and Waxham, all skilled operators. Dr. Waxham reports 136 cases of his own, with 37 recoveries, or 27·2 per cent.; and of these 72 were three years of age or under, with 16 recoveries, or 22 per cent., the youngest to recover being nine months; 64 were over three years, and of these 21 recovered, or 32·8 per cent. It is stated that in every case membrane was observed before operation, and it is clear from the reports of the cases that in the vast majority death would have speedily occurred had not the operation been performed. The suggestion, therefore, that the success is due to early operation must, in the face of the reports, be silenced. Dr. Waxham concludes that 25 per cent. will be saved, and that, for his part, he will never perform tracheotomy again. So great a measure of success has not attended the practice of others. Thus Dr. Strong, in the discussion on Dr. Waxham's paper, reported 32 cases, with 31 deaths, the fatal issue being attributed to traumatic pneumonia, extension of membrane, and actual starvation. Another speaker, Dr. Hatfield, recorded 10 cases, all fatal. If the results obtained by Ingals and Waxham be contrasted with tracheotomy, the new operation stands first as a means of saving life. Tracheotomy under four is admitted to be, on the whole, unsuccessful. Dr. Ingals estimates the recoveries at 15 to 20 per cent.; Trousseau for all cases, 20 per cent., or 1 in 5. Individual operators can, no doubt, show better results than these; thus Dr. Mudd, in contrasting intubation and tracheotomy, gives as occurring in his own practice and in that of his firm 171 cases, with 46 recoveries, or 26·9 per cent. His later cases did better, for out of the last 32 no fewer than 16 recovered. This success he attributes to the milder character of the disease, and to the fact that the operation was performed earlier. Those who see much of tracheotomy know well how the results vary with the character of the disease, and the same influences act, of course, for or against intubation. I remember a series of 19 tracheotomies at Guy's with 1 death, followed by another series in which nearly all died. (Mr. C. J. Symonds, p. 251.)

PHTHISIS.—*Colorado as a Health Resort in.*—The testimony of the physicians I spoke to in Denver and at Colorado Springs was this: that the high altitude is specially recommended for (1) early phthisis, or where there is a tendency to this from hereditary predisposition; (2) hemorrhagic phthisis; (3) chronic pleurisy, where after the removal of the fluid the lung does not expand, and in chronic pneumonia where the consolidation is not removed; and (4) the second stage of the disease, when it appears to be quiescent and there is no evidence of rapid disintegration. The patients who should not be sent are those who suffer from heart disease, chronic bronchitis, emphysema, or where with phthisis in the first two stages there is any nervous irritation and sleeplessness or affection of the kidneys. They were also pronounced on a crucial question, viz., that there was not complete recovery, except in the incipient stage; that there was only a drying-up of the tubercular deposit, which would again become active if the patient returned for however brief a time to a climate which was variable and moist. The continuance of the dry aseptic air was essential, and disregard of this fact led to a rapidly fatal issue. The patient, male or female, in whose case the phthisis is arrested, must necessarily live permanently in Colorado or in a high altitude. (Dr. Charteris, Lancet, Nov. 26, p. 1061.)

Laryngeal and Pulmonary Phthisis.—Creasote in.—From the present great interest in the treatment of phthisis and the restless search for new remedies or modes of cure, some remarks by Hofmann (Berliner klin Wochenschrift, Dec. 26, 1887, p. 985) may be cited with profit. This author cordially agrees with the statement of Sommerbrodt (Ib., 1887, Nos. 15 and 48) that the beneficial action of creasote in phthisis is in direct proportion to the amount used. In place of the usual wine and creasote, and the unpleasant combination with cod-liver oil, Hofmann has used during eight years a mixture of the drug with tincture of gentian in the proportion of one to two. Beginning with ten drops three times daily, the dose is run up rapidly to twenty, twenty-five, or even thirty drops. Short interruptions were allowed, and this remedy was universally well borne and exhibited no toxic effects. In cases of laryngeal phthisis in addition to the creasote internally, nitrate of silver was used locally in substance with the best results. Even in advanced cases the treatment was carried out, not so much in the hope of curing as for the reason that it seemed equal to any other in alleviating the symptoms of the later stages. Even in such cases real benefit often followed. Contrary to expectation, in intestinal tuberculosis and the diarrhœas referred to it, creasote was of no benefit. In general miliary tuberculosis it is useless, and the forms of disease most benefited have been those with hemorrhages, or with

caseous or fibroid degeneration. During actual hæmoptysis the use of the remedy is suspended. The author thinks the most decided value of the treatment results from improvement of the gastric and intestinal digestion, the immediate cause of which he leaves undecided. The rapid improvement of appetite and assimilation soon appears manifest in increased weight and renewed vigour, and through the latter the patient is rendered more capable of withstanding fresh inroads of disease. So evident was the effect on the alimentary tract that the author was led to use creasote with benefit in ordinary cases of dyspepsia and gastric catarrh. In bronchitis of children it was used with satisfaction, and the recommendation of Sommerbrodt to apply it in cases of enlarged glands and eczema was followed with advantage. Though the use of the mixture, as given above, often causes coughing and hawking, it seems, on the whole, preferable to capsules, evidently for the reason that the latter cause a greater local irritation where they are dissolved, and the local action in the mouth, throat, and œsophagus is highly desirable. In view of the very favourable results of Hofmann, it is to be hoped the hesitation to use creasote in full doses will be overcome, and that it may receive what its advocates claim it deserves, a thorough, long-continued trial. (American Journal of Medical Science, March, p. 288.)

Phthisis.—Dilatation of the Stomach in.—In phthisis the existence of gastroectasis is far more common than is generally supposed. I ought to have taken statistics on this question, which would have been easy enough in chamber practice; as it is, I can only offer you the inconclusive proof of my own undefined experience, and ask you to watch the matter for yourselves. Two of my cases of phthisis treated in Switzerland, and another case treated on the sea, were terribly retarded by higher degrees of dilatation of the stomach. All these cases were otherwise of a very hopeful kind, and two of them have made fair recovery; the third died solely because of the gastroectasis, which thwarted all our efforts to advance his nutrition. In these cases I must say that I do not speak of advanced or prominent dilatation, but of a degree which can be detected by careful examination, and the symptoms of which are chiefly pain, impaired nutrition, and nervous depression. To such persons the dietary of seagoing vessels and of hotels is often very harmful, and their cry of dyspeptic suffering ascends without ceasing. (Dr. T. C. Allbutt, Lancet, Nov. 5, p. 906.)

[See also Dr. Clifford Allbutt's paper on Simple Dilatation of the Stomach at page 193 of this volume.]

Pleuritis Pulsans.—Keppler makes an exhaustive review of the literature of pulsating pleuritic effusion; gives abstracts of

the different reported cases, and details another instance of this unusual condition—in all, thirty-eight cases. In remarks on the subject, he says that pulsation can be noticed in various forms of inflammation of the pleura, though it is by far most commonly seen in empyema necessitatis of the left side; twenty-three of the thirty-eight cases being of this nature. The list also contains eleven cases of simple left-sided empyema, two of empyema necessitatis of the right side; one of left pyo-pneumothorax, and one of right-sided pleurisy with serous effusion (the author's own case). As regards the influence of age and sex on the production of pulsating pleurisy, as far as the data inform us, it occurs more frequently among men, and between the ages of twenty and thirty years. The author believes that in pleuritis pulsans the intercostal muscles must be paralyzed and yielding; the fluid must be under a high degree of pressure, and the cardiac impulse must be sufficiently strong. An exudative pericarditis as described by Traube, or the causes claimed by the writers mentioned, may be additional factors in some instances. Pulsating pleurisy usually, but not always, occurs in chronic cases, and where the fluid is purulent. The pulsation is generally universal; and hence, in empyema necessitatis, may be confounded with aneurism. Its seat, however, is different, and no *bruit* is to be heard; while it grows smaller under pressure, and larger after coughing. (Dr. Osler's Report, American Journal, Jan., p. 78.)

Simple Perforating Ulcer of the Septum Nasi.—At the Leeds and West-Riding Medico-Chirurgical Society on March 2nd, 1888, Mr. Jessop described four cases. The first, a lady aged 44, applied on account of a whistling sound produced in her nose on breathing, and slight itching. There was some ulceration round the perforation, with dried blood on the surface. The sore healed under the use of strong nitric acid, followed by scraping, leaving an aperture which would admit a cedar pencil. The second case occurred in a married woman aged 30. The aperture was at the anterior edge of the septum, of a year's quiet growth, and the edge was ulcerated only posteriorly. The third was in a man aged 39. The aperture was of the size of a threepenny piece, and the edges were covered with crusts, which he used to remove with his finger. The sore improved under the use of nitric acid. The fourth case occurred in a lady aged 34, who applied to him in March, 1865. She had been married ten years without family, and her uterus was anteflexed, with a copious discharge. In September, 1866, the sight of one eye (the other having been previously lost) began to fail, for which spectacles were given; and in April, 1887, she complained of redness of the ala nasi. In August an examination in consequence of nasal irritation revealed a perforation of the septum, which improved under local treatment. Her husband thought he had had syphilis three

years before marriage, but had had no secondary symptoms. This was the only case in which there could be the faintest suspicion of a syphilitic history. Mr. Jessop referred to Mr. Jonathan Hutchinson's paper describing this condition, with its description of a number of cases; and he commented on the slow course of the ulcer, its uniform character, and the absence of fœtor or discharge. It seemed to be a condition affecting middle life, and answered well to local treatment, antisyphilitic remedies being useless. Mr. Lodge showed a patient suffering from a perforation of the septum nasi extending some distance back towards the posterior nares, which he thought was probably congenital. (British Med. Journal, March 10, p. 539.)

Tonsillitis.—*Treatment by Salicylate of Soda.*—I think the desirability of having some really reliable remedy for this common and painful affection must be felt by all interested in the healing art; especially when we consider how useless in the majority of cases are the so-called specifics for this disease, whose name is legion. This consideration, together with the idea that tonsillitis bears some not distant relationship to acute rheumatism, led me to try the salicylate in every case that has come under my care for the last two years. As far as I have had the opportunity of examining the action of the drug in those cases, it has come up to my best expectations, the fever, which is not inconsiderable in many cases (103° F.), is speedily reduced, the action of the skin promoted, the resolution of the inflammation in the throat hastened, and the formation of tonsillar abscess averted. My plan of treatment is as follows:—Open the bowels freely with a good dose of mistura sennæ co., put the patient on milk diet, and administer the following draught: ℞. Sodii salicylatis, grs. x—xv; tincturæ aurantii corticis, ♏x; aquam ad ℥i. M. fiat haustus, quartis horis sumendus. When the inflammation in the throat begins to subside, reduce the dose of salicylate and continue to give it in smaller doses for a few days after all throat symptoms have disappeared. The fact of my not having heard or read of the use of salicylate of sodium in these cases, and the hope that some of my professional brethren will give it a more extended trial, induce me to make this communication. (Mr. A. Hillaby, Pontefract, Practitioner, April, p. 260.)

Whooping Cough.—*Insufflation in.*—The following combination has acted very favourably in whooping-cough: Benzoin in powder and salicylate of bismuth ʒ iv of each; quinine 15 grains. This is thoroughly incorporated and reduced to the finest powder. By means of an insufflator, or suitable tube, the powder is blown through each side of the nares into the posterior nares and pharynx several times a day. (Dr. Bartholow, American Journal, Jan. p. 73.)

AFFECTIONS OF THE DIGESTIVE SYSTEM.

Abdominal Contusions.—In the International Journal of the Medical Sciences, October, 1887, Dr. F. Curtis has made a most exhaustive examination, both experimental and clinical, of the results of contusions of the abdomen, with a view to displaying the indications for treatment, operative or otherwise, in such inquiries. The paper opens with an account of forty-four cases of abdominal contusions experimentally inflicted upon dogs, and from these experiments the following conclusions are stated:—1. Exploratory laparotomy can be performed without danger. 2. The most common causes of death after contusion of the abdomen, produced experimentally, are hemorrhage and shock; and the latter is greatly increased by a prolonged operation such as resection of the intestine. 3. Some cases of internal hemorrhage, otherwise fatal, can be saved by prompt action. 4. Prompt action will save life in contusion, threatened gangrene, and even rupture of the intestine. 5. The danger is greatly increased by delay as shown by the early occurrence of gangrene, the rapid failure and death of cases left without treatment, and the greatly impaired strength found in cases in which treatment is delayed. The clinical part of the paper consists of a minute analysis of (1) 116 cases of rupture of the intestine, and (2) of 33 cases of contusion ending in recovery. Almost all the cases referred to have been collected from literature, and so may be taken as representing the most striking and severe examples of abdominal injury of the kind under discussion. In the cases of rupture of the intestine the figures indicate the following facts. The most common cause is the kick of a horse or a man. The small intestine was the seat of rupture in 109 cases out of a total of 116, the large intestine in 4 cases only, thus confirming the old theory that the danger of rupture is greatest in those parts of the intestine which are most fixed, but the large intestine must be excepted on account of its sheltered position. There are not infrequent exceptions to the assertion that the amount of injury will be proportional to the violence of the blow, though on the whole the assertion is true. Fæcal extravasation is almost invariably present, but may be delayed or even absent. Contusion of the gut may lead to peritonitis, even when not so severe as to cause gangrene and perforation. The most frequent and important complication of rupture of the intestine is laceration or contusion of the mesentery. The hemorrhage from the ruptured gut is trifling unless the mesenteric border is involved; and even then it is not usually serious. But hemorrhage from laceration of the mesentery may cause death in a few minutes, and even slight injury to its vessels may deprive part of the intestine of its blood supply and cause gangrene, although the gut itself have escaped

injury. In cases where the intestine is ruptured the immediate symptoms are shock, with or without loss of consciousness, restlessness, vomiting, retention of urine, absence of fæcal passages, local pain and tenderness, and the physical signs afforded by examination of the abdomen, such as distension, rigidity of the abdominal wall, dulness or resonance on percussion, and loss of liver dulness. This latter sign is discussed at some length, and we have reproduced the author's remarks upon it elsewhere (see *Synopsis*, p. 51). In the later stages of the cases the temperature may be normal, or raised or depressed. Fæcal vomiting occurred in 10 per cent. of all the cases. In studying the course of rupture of the intestine three sets of cases must be distinguished. In the first set the shock caused by the accident never leaves the patient, may never diminish, but passes rapidly or slowly into a collapse which lasts till death. While this is a characteristic of the cases in which hemorrhage accompanies the injury it is not confined to them, for the accident itself, a fæcal extravasation (occurring at the time or subsequently) may produce a collapse which will prove fatal in a few hours. The second set of cases includes those in which a frank peritonitis develops, with all its characteristics well marked, after the shock has passed off. These are not the most common cases. The third set is the most numerous. It comprises those in which the patient, after recovering from the shock, lies in a state of apathy, or he becomes gradually weaker, and because less able to complain appears to be improving; or the symptoms of peritonitis develop by degrees and so slowly that no one can say of any moment that it marked the beginning. The prognosis in rupture of the intestine may be said to be absolutely bad, an average computed on 112 cases giving the duration of life, after the accident, as forty-eight hours. Evidently nothing is to be hoped from nature, and whatever improvement is to be made in the prognosis must be obtained by operative treatment. The practical results of the inquiry are summed up as follows:—"1. The treatment of contusion of the abdomen should be purely expectant in the early stage, until symptoms of internal injury have appeared, or until the full extent of time in which they may be expected has passed. Explorative laparotomy at this time is inadmissible. 2. When symptoms of uncontrollable internal hemorrhage, or serious visceral injury appear, laparotomy is indicated; but, when the diagnosis is uncertain, the operation should always be begun as an exploration. 3. Great collapse is an absolute contra-indication to all operative interference. 4. When rupture of the intestine is found, the best method of treatment is to secure the injured gut in the abdominal wound, and form an artificial anus. This can be easily relieved by a later operation, when the patient has recovered his strength." (Editor of *Retrospect.*)

[For. Dr. F. Curtis's remarks on the Treatment of Abdominal Contusions, and on Some Points in the Technique of Laparotomy for Ruptured Intestine, see pages 292 and 295 of this volume.]

Bullet Wound of the Intestine.—*Successful Laparotomy for.* —At the New York Surgical Society, on Nov. 9th, 1887, Dr. Lange reported the following case: On the 12th of October he saw at the German Hospital a boy, fourteen years of age, who, twenty-four hours before, while playing with a small revolver (22 calibre), shot himself in the abdomen, the ball entering about one and a quarter inches below the navel, and about one inch to the left of the median line. He did not look as if he was suffering from shock. His pulse was 112 to 120, his temperature 101°, and he did not have much pain, although there was marked tenderness on making pressure over the left hypogastrium. There was some tympanites, and the abdominal wall was tense; the breathing was almost entirely costal. The normal liver-dulness was preserved, and there was no change in the ordinary percussion sounds. There was evidently commencing peritonitis, thus far limited to the left hypogastric region. Laparotomy was performed at once, the abdomen being opened in a line with the point of entrance of the bullet. The track of the latter could not be traced through the muscles, nor could any wound be found in the peritoneum, although there was a small extravasation in the retroperitoneal space. On opening the peritoneum, about an ounce of brownish, sanguinolent fluid escaped. The wound was enlarged to about six inches, and the intestines were lifted out and carefully examined. Seven perforations were found in the gut, both walls being pierced in three places, while the fourth wound involved only one wall. About four ounces of bloody fluid were discovered at the deepest point of the abdominal cavity but it did not have a fæcal odour, nor was any fæcal matter mingled with it. The openings in the intestinal wall appeared as small, grayish spots surrounded by zones of hyperæmia. The mucous membrane was nowhere everted, but all the openings seemed to be firmly closed. At one point the track of the ball was visible in the wall of the gut. Six of the perforations were closed with three or four interrupted sutures of iodoform catgut, while the seventh was not touched, as it seemed to be firmly united. The boy made a good recovery. The temperature did not rise above 101°, and became normal on the twelfth day, after evacuation of a mural abscess. The bowels moved spontaneously on the third day, in spite of opium, the discharge being dark in colour and very fœtid, this being probably due to decomposed blood. During the next four days they moved three or four times daily. The ball was not found in the stools, although search was made for it. (Medical News, Nov. 26, p. 630.)

CONSTIPATION.—*Glycerine Enemata ("Purgatif Oidtmann") in.*—Dr. Anacker communicates to the Deutsch. Med. Woch. an account of a proprietary article, advertised and sold by a Dr. Oidtmann in Maestricht, Holland, under the name of "Purgatif Oidtmann." It consists of a bottle containing a greyish-black fluid, with a greenish tinge, which is rather thick and somewhat oily, and has an odour of the urine of mice. A small syringe, holding about a drachm, accompanies the bottle. It is said that on injecting half a drachm of this fluid into the rectum, an immediate desire to defæcate occurs, and the bowel is painlessly and fully emptied, only slight irritation of the anus being felt for a little while. Dr. Anacker finds that the fluid consists of glycerine, a preparation of conium, and a soda salt. His experiments show, he says, that glycerine is the active agent, for 20 to 30 minims injected into the rectum quickly cause a full evacuation. He attributes the influence of the glycerine to its hydroscopic properties. Water, he says, is withdrawn from the mucous membrane of the rectum, the circulation in the lowest part of the intestine is rendered more active, peristalsis is set up, and defæcation ensues. (Dr. Leech's Report in Medical Chronicle, Dec., p. 229.)

ENTERECTOMY AND ENTERORRHAPHY.—A very troublesome case of fæcal fistula, successfully treated by Mr. J. S. M'Ardle, forms the basis of a general discussion of the subject in the Dublin Journal of Medical Sciences for Jan. The patient, a boy aged 16, had a fistula about the middle of the right iliac crest leading into the iliac fossa, and discharging a large amount of curdy pus containing all the solid particles of his food. His ailment dated back fifteen months, and was due to jumping from a cart on to a paved roadway, when he experienced very severe pain in the right inguinal region. At the operation an incision was made 7 inches in length, extending from about two inches above the anterior superior spine of the ileum obliquely downwards and inwards to $1\frac{1}{2}$ inch above the middle of Poupart's ligament. On exposing the intestines, there was much matting together of the parts and fixation to the pelvic parietes. A coil of small intestine lying over the cœcum was found to have a fistulous communication with the ileum. This was detached, and the oval-shaped orifice in the gut sutured. Two or three fistulous openings existed in the ileum; these were removed by a complete resection of the intestines at this part. Difficult as the operation appears to have been at every stage, the patient made an uninterrupted recovery. In the subsequent discussion of the subject of enterectomy, the author points out the great mortality following immediate resection of the intestine in cases of gangrenous hernia. On the other hand, the preliminary formation of an artificial anus in those cases, with resection at a

subsequent date, gives a record of recoveries of over two-thirds of those so operated upon. (Glasgow Med. Journal, April, p. 364.)

Epithelioma of the Tongue.—*The Advantages of Early and Complete Removal.*—It is universally admitted, I believe, that squamous epithelioma is at the outset almost always local, being preceded by a small inflamed area excited by some irritant cause. This isolation, however, is only confined to the first stage, which, on account of the great vascularity and close lymphatic connections of the organ, lasts for a very brief period. The insidious migration of the cancer germs through the lymphatics to the nearest glands very soon takes place; how soon it is a regrettable fact we do not know, but undoubtedly long before induration is detectable. It is constantly observed that recurrence takes place much more commonly in the lymphatic glands, after complete removal of the tongue, than in the adjacent tissues of the mouth. In order, therefore, to obtain a permanent cure, it is absolutely necessary to act promptly, as when cancer of the tongue has once taken firm hold it progresses with great rapidity and unerring certainty to a fatal issue. Delay is not merely dangerous, but fatal to success. The whole of the tongue should be removed in every case. My reasons for complete, in preference to partial, excision are several. Amongst them is the fact that the patient can eat and speak when the whole tongue is removed better than when only a portion has been taken away; another, and one which ought to be conclusive, is that no surgeon can define the ultimate limits of the disease, and when dealing with a growth of such unquestionable and rapid malignancy it is better to err on the right side and remove plenty. That a complete operation, when the disease is limited to the tongue, can be performed through the mouth has been demonstrated so often that there is no longer any legitimate ground for supporting other operations designed for the same purpose which involve unnecessary mutilation of external structures, as those introduced by Syme, Regnoli, Kocher, and Furneaux Jordan. It needs, moreover, no elaborate arguments to prove that the powers of speech and deglutition are not materially impaired by this radical treatment. Three years ago I removed the tongue of a medical man, an old fellow-student of my own, for epithelioma, the clinical history and the microscopical appearances leaving no doubt as to the correctness of the diagnosis. He is still alive, and in excellent health, and during the last meeting of the British Association in Manchester he was interviewed by several English and continental surgeons without their being able to discover by his speech that his tongue was entirely absent. The only inconvenience complained of by this patient in consequence of his loss is that he can neither whistle nor "lick" postage stamps. So far from the removal of the tongue

limiting the conversational powers of my patients, I am bound to say it seems to me to have quite the opposite effect. Most patients appear only too proud of illustrating what articulate wonders can be accomplished without the aid of what has been usually called the organ of speech. In melancholy association with this case stands that of another old fellow-student, who consulted me within a month of the previous one, who suffered from epithelioma of the tongue of about the same degree and duration. Refusing, however, to undergo any operation he died within a few months—one of the most miserable deaths it has ever been my misfortune to witness. (Mr. Walter Whitehead, Lancet, Jan. 28, p. 168.)

Excision of the Tongue.—*After-treatment.*—Directly after the tongue is removed the floor of the mouth is washed with a solution of perchloride of mercury, well dried, and then painted with the antiseptic varnish. As I have had several letters of inquiry relative to the composition of the latter, I may say that it contains the ordinary ingredients of Friar's balsam, substituting a saturated solution of iodoform in ether for the rectified spirit. This dries immediately and leaves a firm coating on the wound, which lasts for twenty-four hours and does not produce the least irritation; indeed, it is rather agreeable than otherwise, and many patients ask for the re-application, which is daily required as if it were the most comforting part of their toilet. I consider this method to be much more satisfactory in every way than the plan of packing the floor of the mouth with antiseptic gauze or Billroth's sticky gauze, and certainly the patients prefer it. One man on whom I operated at the Manchester Royal Infirmary, whose mouth I packed with iodoform gauze, swallowed the dressing, and its ultimate destination has never since been ascertained. The most perfect results as regards local fœtor and constitutional infection can be obtained with the etherised balsam. and it allows (which is of great moment) the patient to take food the day after the operation. One great advantage of the substitution of varnish for gauze is that the patient can take liquid food in the ordinary way almost immediately after the effects of the anæsthetic have passed off. Such persons are always benefited by liberal diet, as the local pain, &c., before the operation often leads to semi-starvation and emaciation. After the removal of the tongue I never encourage the patients to consider themselves invalids. In fact, the less they adopt the recumbent posture the better. Allow them to lie down of course after the anæsthetic, but by all means see that they get up next day, or the same day if the operation has been performed in the morning. Weather permitting, open-air exercise can be commenced on the second day after the operation, and helps to promote rapid convalescence. (Mr. Whitehead, Lancet, Jan. 28.)

FISSURES OF THE TONGUE.—*Papayotin in.*—Schwimmer has succeeded in the treatment of fissures of the tongue with papayotin after failure with chromic acid, iodoform, and nitrate of silver. He used a solution of from 1 to 2 parts of papayotin in 10 parts each of glycerine and distilled water, applied five or six times a day, the fissure being previously well dried. No maceration takes place, but the pain is stopped and the epithelium renewed. The treatment was used in twenty-five cases, all of which were completely cured, except one, which was of a syphilitic nature, and in that case, although antisyphilitic treatment had failed, amelioration followed the use of papayotin. (New York Medical Journal, Oct. 8, p. 421.)

GASTRIC DISEASE.—*Absence of Free Hydrochloric Acid in the Gastric Juice.—Its value as an evidence of Gastric Disease.*—Professor Ewald, in an appendix to a paper on this subject by Grundzach of Warsaw, says: 1. The hydrochloric acid of the stomach contents may be awanting and fail to be shown by the usual reagents, even after the ingestion of the acid, without there being any manifest disease of the organ. 2. That also in stomach diseases which are certainly not of a carcinomatous nature the hydrochloric acid may not be present. 3. That there are also cases where the peptone-forming power of the stomach is awanting, and that this absence, if steady, takes place in every carcinomatous disease of the organ. One can only explain this fact by supposing that the stomach possesses no digestive energy peculiar to itself, but that the stomach contents, so far as peptonizing is concerned, may be forwarded almost unaltered into the bowel, and there first be prepared for nutritive purposes. At all events, Grundzach's communications and our (Ewald's) own have considerably shaken the view that carcinomatæ of the stomach have any specific qualities of causing the disappearance of the hydrochloric acid formed, or limiting its secretion in the stomach, and accordingly the diagnostic application of the failure of free hydrochloric acid, in the sense of a carcinoma being always at the bottom of it, also suffers a farther weighty limitation. (Dr. Troup's Report in Edinburgh Journal, Nov., p. 474.)

GREEN DIARRHŒA OF CHILDREN.—Another alleged triumph of the microbe is brought to light through the researches of M. Hayem and his assistant, Lesage, who affirm that this industrious creature is the cause of the green stools of children. These investigators assert that for the first twenty to twenty-five days after birth diarrhœa occurring in children is apt to be bilious in nature, but such a form of diarrhœa becomes more and more rare up to the age of six months. After this time, if the discharges are examined in cases of green diarrhœa, an innumerable number of pathogenic bacilli will be found, to such an

extent that to their presence is due the peculiar mucous character of these stools; while the colouration is due not to the bile-pigments, which are entirely absent, but to a peculiar pigment secreted by the bacilli themselves, and which may be reproduced in artificial cultivations of the microbes. It would, therefore, seem clear that because the passages in a case of diarrhœa are green it is not warrantable to speak of them as bilious, since in many cases bile-pigments will be entirely wanting in cases of green diarrhœa. Further than this, it would seem that this form of specific diarrhœa is contagious, and may be produced in different animals by the induction of the bacilli through various means. While it is claimed, however, that there is a certain amount of probability in the contagion of the disease, of course it does not imply that dyspeptic troubles are without influence on the development of this form of diarrhœa, since it is readily conceivable that indigestion, by preparing the soil, may favour the production of this bacillus. Hayem and Lesage have found the greatest success in the treatment of this form of diarrhœa by the administration of a two per cent. solution of lactic acid in teaspoonful doses. Of course, in this form, as in other forms, of diarrhœa, the diet must be regulated. Care must be taken to employ disinfection of the stools to prevent the spread of the affection, and by proper care it is claimed by these means the mortality of this microbic form of diarrhœa may be reduced to a minimum. (Therapeutic Gazette, Jan., p. 31.)

HERNIA.—*Operation for Radical Cure of.*—I usually operate in the following manner. The sac is exposed by an incision extending downwards and inwards from the external abdominal ring as far as may be necessary. In ruptures in infants, one inch and a half is generally a sufficient length; in adults or in youths with a large rupture, it may require to be two inches and a half or three inches long. The sac having been exposed, must be carefully and laboriously disconnected from the elements of the cord. This is often a very tedious process, and is best effected with the director and a pair of small scissors. In congenital and infantile herniæ, which constitute the bulk of those operated on in young subjects, the isolation of the sac is often particularly tedious. As soon as the sac is well separated as high as the external ring, and for an inch or so downwards from that point, it should be included in two catgut ligatures and divided between them. The lower ligature serves to close the tunica vaginalis if it is a part of the sac, as it generally is in congenital cases, while the upper one seals the peritoneal cavity. If the sac should be of great size, as much of the distal portion of it as is advisable may be removed. The proximal portion of the sac is then seized and twisted, the torsion being carried to such a degree that a sense of resistance is felt. It is difficult to lay

down a rule as to the amount of force to be employed in twisting; the object of the operator should be to secure as complete closure of the sac, as close approximation of the walls of the canal, and as much tension and obliteration of the inguinal pouch as possible, without incurring the danger of the contorted sac sloughing from too severe treatment. Two sutures of silk are then introduced. Each is made to pass through the pillars and walls of the canal, and to transfix the twisted sac between the inner and outer walls. The sutures should be brought through the skin about an inch from the incision on each side, and the ends of each tied "button" fashion over a leaden plate. Deep apposition is thus secured, and the twists are retained in the sac. Points of interrupted suture are then inserted in the skin, and the wound dressed antiseptically. In very young children a single deep suture may suffice. (Mr. Thornley Stoker, of Dublin, p. 277.)

Hernia.—Radical Cure of Inguinal Hernia; State of the Parts in a Successful Case.—At the Glasgow Medico-Chirurgical Society Dr. Macewen showed the parts involved in a left inguinal hernia removed post mortem from a man upon whom he had performed, three and a half years previously, his operation for the radical cure of hernia. On ocular inspection of the external aspect of the inguinal regions, there was no undue bulging or laxity observable on the left, both sides seeming identical in this respect. The linear cicatrix at the site of the operation was scarcely discernible. The finger introduced into the left external ring, through an invaginated scrotum, could not be passed further than the outer pillar of the external oblique aponeurosis; but on the sound side the canal could be entered more freely, and the internal ring felt. The skin and subcutaneous tissue were removed from the left side, and subsequently the deep layer of the subcutaneous fascia, so as to expose the external oblique muscle and its aponeurosis. The cicatrix in the superficial structures was firmly adherent to the outer portion of the decussating fibres of the external oblique aponeurosis, and also in part to the conjoint tendon. The pillars of the external ring were dissected and freely exposed, the outer was found to be firmly attached to the conjoint tendon, thus obliterating the canal, with the exception of the passage for the cord. The testicle was fully developed, and neither in it nor in the cord were there any signs of atrophy. The internal aspects of the abdominal wall showed that both inguinal regions were nearly the same, the difference being that of an increased thickness on the left side opposite the internal ring, which became all the more pronounced when the parts were submitted to digital examination. The left inguinal region presented on the outside of the epigastric artery a duplicature and multiple folding of the peritoneum, overlying and completely

obscuring the internal abdominal ring, and terminating above and to the outside of it in a cicatricial band, marking the place where the folded sac had been sutured to the abdominal wall. On pressing the tip of the finger on this structure, opposite the site of the internal ring, a firm though elastic pad was discerned sliding somewhat over an aponeurotic layer—part of the conjoint tendon. The peritoneal duplicature, enclosing the remains of the folded and obliterated sac, formed a gentle undulation, its convexity looking backwards, towards the abdomen, the edges of which shaded off without abrupt projections into the peritoneum lining the abdominal wall. It will be seen from this that the conjoint tendon has been pulled outward, so as to restore the valved form of the inguinal canal, and that the canal has been occluded by adhesion of the conjoint tendon to the outer pillar of the external oblique, leaving space below for the passage of the cord; that the obliterated sac has so admirably performed its purpose of pad on the abdominal aspect of the internal ring, that while it overlay and formed a thickening of the abdominal wall at that part, its edges sloped so gently into the peritoneal covering, as to prevent anything like objectionable irregularities. It was thus a source of great strength to the abdominal parietes without in any way being detrimental. There was no adhesion of the bowels to the parietes. It may be concluded that the hernia has indeed been radically cured. (Glasgow Med. Journal, March, p. 241.)

[See also Dr. Macewen's paper on his Operation for Radical Cure of Hernia *(illustrated)*, at pages 265-274 of this volume.]

Hernia.—Inguinal Hernia in Children.—The Management of Trusses, &c.—The proper size of truss, in accordance with the ordinary measurement round the pelvis, having been found, we should next see that the strength and curve of the spring, if a spring truss is used, are right. Any required alteration in these respects is readily made by moulding with the hands. The lie of the pad, so as to press upon the whole length of the canal, and its shape should be seen to. Next, if a perineal strap is worn, it will nearly always be found too long in trusses as they come from the makers, and should, of course, be shortened. All these matters having been attended to, the hernia is to be reduced finally (it is of course assumed first that it is a hernia and nothing else, and secondly that it is reducible), and the parts are to be well dusted with boracic acid powder (or "sanitary rose powder") and then the truss is put on. The sacrum and the hips should be carefully looked to, to see that there is no undue pressure, and the perineal strap must lie clear of the anus and not pinch or irritate the scrotum. Now for the instructions to the friends. "That truss must not be taken off under any pretext or for any

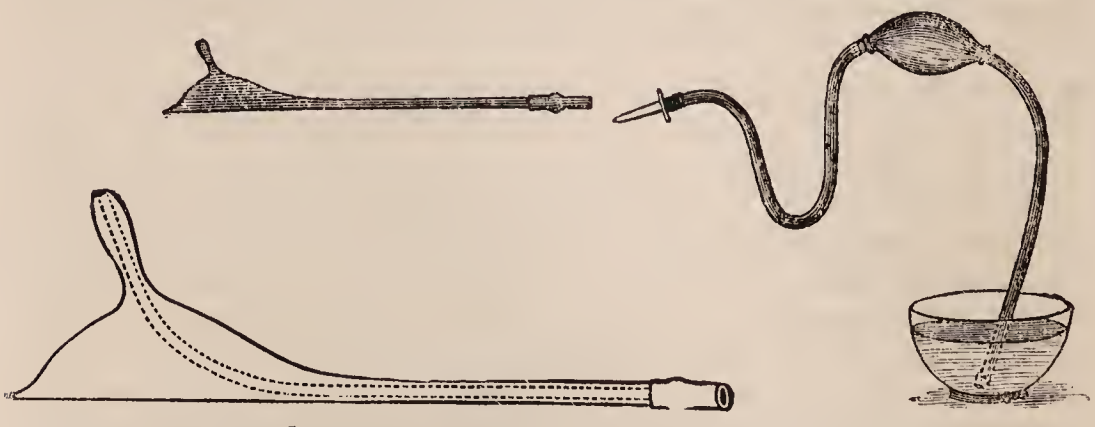
purpose whatever night or day without the surgeon's orders, save and except only when the skin under it is made raw." (This of course implies a bad fit or bad management.) These instructions will be received with incredulity or horror, according to the view of the parent or nurse. "I am to take it off of course when the child has its bath and when it goes to bed," is the usual remark, and this I may say is the result of long years of bad management on the part of the instrument makers, and of neglect on the part of surgeons. If, however, the surgeon makes it clear that the object of the truss is to cure the rupture, and so ultimately make the child like other and sound babies, the friends will soon understand. I generally put it in this way, supposing the child to be an infant of a month or two old, with a simple hernia. "If you keep up that rupture without its once coming down for three months" (or six months, according to age and circumstances), "it will almost certainly never come down again, and the child will be well, but you must remember that if it does once come down all the previous treatment is useless and goes for nothing." If the friends believe this there is a good prospect of a cure of the hernia in this way. The bath is perhaps the great objection in the minds of most mothers, but when they are shown that the child can be sponged over without disturbing the truss, and that the powder can be dusted beneath without taking it off, the difficulties are soon got over. The older the child and the larger the hernia, the longer is the time required for cure by truss wearing, and the less certainty is there of a cure being obtained; but in any case of an uncomplicated reducible hernia a fair trial should be given. In the majority of the cases that I have seen fail, the failure has been due to carelessness, or bad management of the child in one way or another. These are then the principal points in the matter of simple cases in children. (Mr. G. A. Wright, p. 283.)

Idiopathic Dilatation of the Colon.—At the Clinical Society on January 27th, 1888, Dr. Angel Money and Mr. S. Paget contributed a paper on a case of so-called Idiopathic Dilatation of the Colon. Mr. M., aged fifty-five, an habitual drunkard, suffered from enormous distension of the colon, with dyspnœa and bronchitis; the girth was over sixty inches, and the measure from the ensiform cartilage to the pubes twenty-six inches. There was albuminuria. He was treated first by Mr. Paget at St. Thomas's Home by repeated punctures. These gave great relief; he improved so much that he refused further treatment, and returned to his drunken habits. He was admitted into University College Hospital a week later, under Dr. Angel Money, with the same enormous distension, lividity, and dyspnœa. He was much relieved with the long rectal tube, but sank and died a week after admission. At the necropsy all the

signs of habitual drunkenness were found, including typical "hobnail" liver, There was enormous distension of the colon, principally of the sigmoid flexure, which formed two huge sacs extending right across the abdominal cavity. There was no organic stricture. Dr. Money thought that a potential twist of the sigmoid flexure or a spasmodic stricture may have been present; or else that some morbid state of the blood or nerves, or the mere presence of an excess of gas, may have started the disease. The bowel was hypertrophied as well as dilated. He refers to Dr. Gee's paper in the St. Bartholomew's Hospital Reports, and to Dr. Goodhart's (Clin. Soc. Trans., vol. xiv). (Lancet, Feb. 4, p. 221.)

Intestinal Affections of Children.—*Naphthalin.*—Widomitz is quoted by the Med.-Chir. Rundschau, in reporting the best possible results from the use of naphthalin in children. With the exception of dyspepsia, with vomiting of curded milk, he found it useful in all intestinal affections in the following mixture: ℞. Naphthalin. pur. gr. 5 to 15; muc. gum. arab., aquæ chamom. āā ʒ 10; ol. menth. piper., gtt. 1. M. Sig. To be well shaken. Small teaspoonful every two hours. Alcoholics may be added when the condition of the patient demands them. (Medical News, March 10, p. 265.)

Lange's Enema Nozzle.—With a view to overcoming the difficulties experienced in the self-administration of an enema by the ordinary apparatus, Mr. H. J. Lange, of 47, Arthur road, Tollington road, Holloway, N., has introduced a new enema nozzle. This nozzle, which is simple in construction, can be inserted easily into the rectum with one hand without any fear of its slipping too far. With this nozzle the patient can, using



any apparatus he may happen to possess, sit all the while in a perfectly comfortable position, with both hands free to manage the injecting apparatus or syringe. Experience has proved these nozzles to be easy of application and satisfactory in their action. They are made of vulcanite, and sold at a cost of three shillings and ninepence, postage paid. (Brit. Med. Journal, Jan. 28, p. 197.)

Laparo-Colotomy.—In the Surgical Section of the Royal Academy of Medicine in Ireland, on May 20, 1888, Mr. Ball read a paper on colotomy, illustrated by five cases, in three of which the lumbar operation was selected, while in two laparo-colotomy was performed. He advocated the adoption of the latter operation, in the adult as well as the child, for the following reasons:—1. It permits a thorough exploration of the abdominal cavity, which may enable the surgeon in some instances to perform a more radical operation for the complete removal of the disease, and if removal is impracticable, it ensures that the opening is made above the seat of obstruction, instead of below, as has happened with the lumbar operation. 2. The large intestine is found with ease and certainty. 3. A complete operation for closure of the lower lumen, when considered necessary, can be much more readily and completely carried out, thus making the artificial anus a terminus and not a lateral outlet to the intestine. 4. A shorter distance of intestine intervenes between the opening and seat of disease. 5. The abdominal wall being thinner in front, the extent of wound surface is less, and the fine skin of the front abdominal wall permits a much more accurate coaptation of skin to mucous membrane. 6. The position of the wound is more convenient for the patient. The sole advantage of the lumbar operation in ordinary cases is the fact that the peritoneum is not injured; this, Mr. Ball thinks, is not an important matter. As, with attention to operative detail, extravasation of fæces into the peritoneal cavity can absolutely be avoided, for this purpose he has devised a clamp which allows the intestine to be opened and carefully sutured to the skin, and the lower orifice can, at the same time, be closed absolutely without the escape of any fæces into the peritoneal cavity; this he considers a great improvement upon the operation performed in two stages, as recommended by Mr. Davies-Colley. The incision recommended by Mr. Ball is in the left linea semilunaris, taking care not to go below a line joining the umbilicus and middle of Poupart's ligament; by this means the deep epigastric artery will be in no danger of being divided. The sole contra-indication to the performance of laparo-colotomy he considers to be the presence of extensive meteorism, which, under all circumstances, is a very grave complication of colotomy, but which interferes so much with the performance of the intra-peritoneal operation that he adopts lumbar colotomy when the distension is at all extensive. (Mr. C. B. Ball, Dublin Journal, Nov., p. 417.)

Mediastinal Abscess.—*A Case Successfully Treated by Aspiration.*—A powerful and athletic young man, an office clerk, engaged in a "scrimmage" in a football match, fell heavily to the ground, and in his fall was accompanied and crushed by several of his companions. He felt a good deal bruised, and,

before many days were passed, was compelled to acknowledge, though he could not say exactly where or how, that he had been, somewhere, seriously hurt. He became restless, feverish, and ill, was unable to sleep, lost his appetite and strength, and was at last compelled to take to his bed. There, the following symptoms were developed, and, after being present for some days, as they failed to yield to treatment, I was asked to see him with Mr. Scattergood. I found him in bed, looking careworn and ill. He complained of pain in the chest, which was difficult to localise; was tender over the epigastric region on pressure or palpation; had a small and rapid pulse, and at times became hectic and very feverish; attempts at deglutition were painful, and all food, whether liquid or otherwise, gave him great pain as it passed along the œsophagus, and especially as it entered the stomach. He was quite conscious of the locality of greatest pain, and invariably described it as "just as the food gets into the stomach." At the same time the stethoscope revealed distinct crepitation over the base of each lung, and some pericardial friction; and I set the matter down in my own mind as a somewhat general bruising of the internal parts about the lower section of the middle mediastinum. Matters continued in this position for some time, a considerable amount of doubt and anxiety hanging over the case; but eventually it became manifest that we had something more than mere bruising to contend with, for the constitutional irritation increased, fever ran high, the hectic flushings were more marked, and rigors came on. This led, of course, to repeated and anxious consultations and examinations; and at last both Mr. Scattergood and I became conscious, or believed that we were conscious, of a feeling of bulging under the xyphoid cartilage, of increased tension at that part, and we could see that increased suffering was produced at each examination. These symptoms, taken in combination with all that had gone before, seemed to point clearly to a deep-seated abscess; and we determined, notwithstanding the risk, to which we could not shut our eyes, to make an exploration in search of it. With nothing to guide us beyond the general feeling of induration, a long aspirator trocar was passed into the epigastrium, and pressed steadily forward with the utmost caution; and at last, when it had well nigh reached its shoulder, and an ominous amount of pulsation had been communicated to the whole instrument, we were rewarded by the appearance in the cannula of pus, and, by the help of the aspirator, we were enabled to withdraw a large basinful. This evacuation gave, of course, great relief, but it was not permanent; the operation needed repetition, and it seemed not unlikely that the collection would continue until some perfect and continuous exit should be provided, and, after the second aspiration, we felt that we might

safely enlarge the opening made by the needle, and this was done; a drainage tube was inserted, and the cavity regularly washed out with carbolised water. The patient soon after this was free from acute symptoms of every kind, but the cavity did not entirely close until six months after the original accident; nor would it have done so then, had not a permanent outlet been provided for the matter, and the cavity been carefully drained so long as anything remained. Eventually, however, it did close, and the patient is alive and well to-day, nine years after the occurrence. (Mr. C G. Wheelhouse, Brit. Med. Jour. Nov. 26.)

Perforation of the Vermiform Appendix and Recoverable Forms of Peri-cæcal Inflammation.—The initial symptoms give us some indication of the seat and the gravity of the attack. Typhlitis and peri-typhlitis soon offer demonstrable symptoms, but as the appendix is hidden under the intestine, the symptoms of perforated appendicitis are often obscure for two or three days. The most careful palpation may fail to show the slightest fulness. The patient may complain of pain over the cæcum, or over the hypogastrium. External examination does not aid us in the diagnosis. Are there any special features which will help us? He would again refer to the importance of the rectal examination. Early and oft-repeated rectal examination is the most important diagnostic means we possess in this class of affections. Often, on opening the body after death, there is no appearance of peritonitis in the exposed coils of intestine. There is no inflammatory process seen outside of the cæcum, and nothing is found until the cæcum is lifted up, when it is discovered that the inflammation is behind it, and extends downwards to the pelvis. Sometimes, on removing a layer of lymph, a pelvis filled with pus is disclosed. In such cases, if rectal examination should give a sense of distension of the right side of the pelvic roof, might not a puncture be made with a curved exploring needle introduced through the rectum? In this way we might demonstrate the presence of pus, when it would not be possible to do so through the external abdominal wall. In many of these cases there has seemed to be an unusual abundance of urine and an increased frequency of urination. He thinks that the former is associated with the absence of vomiting. In typhlitis and peri-typhlitis, there is often so much vomiting that very little liquid is absorbed, and the urine becomes concentrated. He had seen cases of perforation of the appendix, where the urine was voided at intervals of an hour or an hour and a half, the total amounting to a large quantity. Again, it has seemed to him that in perforation the pain is more apt to extend to the middle line of the abdomen, and sometimes into the genitals, especially into the right testicle and spermatic cord. (Dr. William Pepper, p. 205.)

Perforation of the Vermiform Appendix and Peri-cæcal Inflammation.—At the Philadelphia County Medical Society, on Dec. 14, 1887, Dr. W. Osler said that the important point in connection with perforative appendicitis is, that in the majority of cases the perforation occurs first with slight inflammation in the neighbourhood, perhaps lasting a few weeks or months, without exciting any special symptoms; and the first symptoms to which the attention of the physician is called, and which are rapidly followed by peritonitis, are those of perforation not of the appendix, but of the appendicial abscess. In five instances of peri-cæcal abscess which he had examined, in every one of them there was evidence that the abscess had lasted some time. That this is the case is evident from the fact that there are many instances—of which he had had three—in which there was no perforation into the peritoneum, and no peritonitis occurred, yet there were signs of septic fever. The perforation had led not to general peritonitis, but to inflammation of the portal branches and diffuse abscess of the liver. This is a point which has not been sufficiently recognised in dealing with these cases of perforation of the appendix. With regard to cæcal disease, we have all seen the cases which have been described by Dr. Pepper. They result, in the majority of instances, from impaction; and the induration which we feel is in most cases fæcal. It is important to distinguish between these cases and appendicitis, for the majority recover. We, however, learn from post-mortem examinations that a considerable number of cases of perforation of the appendix also get well—cases, too, in which there have been no special symptoms. He had had three cases of peri-cæcal abscess from disease of the cæcum. Two were cases of round ulcer of the cæcum. In both the cæcum was the only part involved, the ulcer not being larger than a quarter of a dollar. In both instances the perforation was posterior and had excited suppuration in the tissues as high as the kidney. In one instance the abscess had been opened in the loin and had discharged very freely. In the third case the perforation was due to cancerous ulceration. There was in this case a large perforation just beyond the orifice of the ileum. (Medical News, Jan. 7, p. 26.)

Rectum and Anus.—*Conium Ointment for Painful Affections of the.*—Two ounces of the pharmacopœial juice are placed in a small evaporating dish, and permitted to evaporate slowly at a heat under 150° F. till the bulk is reduced to about one and a half or two drachms. This can be done by placing the dish on the top of an ordinary domestic hot-water cistern for twenty-four or forty-eight hours. The syrupy liquid is then carefully triturated with as much lanolin as will make the weight up to one ounce; the result is a perfectly smooth adhesive ointment of a light brown or dark fawn colour and stable. Happening to have

several rectal cases in which severe pain and torturing pruritus were prominent features the ointment was carefully applied. One was a case of multiple small fissures accompanied with intolerable itching; another was associated with severe tenesmus and excoriations from the pus, flowing from an iliac abscess bursting through the *levator ani* muscle and penetrating the rectal walls; another was complicated by a bleeding villous growth. These with two cases of hemorrhoids, one of which had an ulcerated surface, were so markedly and speedily relieved by the conium ointment after nearly every known remedy had failed, that I was surprised at the result. (Dr. W. Whitla, p. 207.)

Relapsing Typhlitis.—At the Royal Medical and Chirurgical Society, on Feb. 14, 1888, Mr. Frederick Treves contributed a paper on Relapsing Typhlitis treated by Operation. In the majority of the cases of so-called typhlitis the appendix is the cause of the trouble, and the perityphlitic abscess is more usually an encysted peritonitis due to perforation of this process than to disease in the cæcum. The appendix may become the starting point of inflammation, by reason of congenital deformities; of changes that take place in its mesentery, producing bending; of the lodgment of foreign bodies or concretions, that are encouraged to remain unmoved, on account of the feeble muscular coat of the tube. This source of manifold disturbance can be destroyed by removal of the appendix, or by correcting any simple deformity of which it is the seat. The question of such interference was only considered in reference to relapsing typhlitis. The statistics of Fitz show that in 11 per cent. of the examples of this affection the patient was the subject of successive attacks. In one case quoted five attacks occurred in the period of eighteen months. The author was of opinion that relapsing typhlitis is due in a very large proportion of instances to some appendicular trouble, and is therefore a condition that may possibly be relieved by operation during the period of quiescence that follows an attack. A case of relapsing typhlitis in a man aged thirty-four was reported. After the subsidence of the second attack, and during a period of freedom from all symptoms, the author performed laparotomy and found a diseased appendix, which was dealt with. The patient made a perfect recovery, and has remained free from further relapses. The mode of dealing with diseased appendices was discussed. (Lancet, Feb. 18, p. 322.)

Rupture of Intestine.—*Loss of Liver Dulness in.*—The disappearance of the dulness on percussion over the site of the liver has long been considered a valuable sign in perforation of the intestine. Its uncertainty has also been frequently alluded to, especially its uncertainty as a negative sign. In only 4 of 116 cases of rupture of the intestine by abdominal contusion has this

point been noted. In 3 cases the liver dulness persisted, but in 1 of these the perforation was in the duodenum and extraperitoneal. In 1 case the results of percussion were at first normal, but in twelve hours tympanites developed and the liver dulness disappeared. We have then 2 cases in which it persisted to 1 in which it was lost. The latter case, indeed, is conclusive evidence that loss of liver dulness is not an immediate and necessary consequence of perforation of the bowel, else it would have occurred in that case at once, if at all. It is evident that this sign depends upon certain conditions. There must be gas in the intestine, and it must escape before adhesions which could limit it have time to form; for although it is possible for gas to be generated in the peritoneal cavity this is a rare occurrence. The liver, too, must be free from adhesions which would retain it in its position. Even as a positive sign, loss of liver dulness cannot be relied upon, unless it is certain that it had been present previously. The various conditions which might mislead in this respect are cirrhosis, backward dislocation of the liver, extreme tympanites, or an actual misplacement of the colon between the liver and the abdominal wall. The first condition should scarcely lead to error, for there would be the presence of other symptoms of the disease, even in the absence of any history. Dislocation of the liver is a very rare condition, and so is the misplacement of the colon, but if the latter ever occurs during life it would be likely to be found after such severe disturbance of the abdominal organs as must be occasioned by the great force which produces these injuries. Extreme tympanites is the condition which will most frequently trouble the surgeon in this respect, but if the liver has been forced above its normal position that fact can generally be determined by careful examination of the thorax. We may, therefore, conclude that total absence of liver dulness is a tolerably certain proof of rupture of the intestine in these cases, but that its persistence is of no value as a sign that there is no perforation. (Dr. Farquhar Curtis, International Journal Medical Sciences, Oct., p. 336.)

Ruptured Intestine.—At the Clinical Society, on Feb. 10, 1888, Mr. Mayo Robson, of Leeds, read a paper on the Diagnosis and Treatment of Ruptured Intestine without External Wound, basing his remarks on six cases which had come under his own observation or under the care of his colleagues, Mr. Edward Atkinson and Mr. Ward. In two of the cases abdominal section and enterorraphy had been performed. After a detailed description of the cases, Mr. Robson remarked that in some cases of ruptured intestine the symptoms were so distinct as to be almost pathognomonic; that other instances of abdominal injury might present most of the signs of ruptured intestine, and yet recover, the shock being due to disturbance of the sympathetic nervous

system, and the diminished liver dulness to distended intestine; that the usual symptoms might be entirely absent for a time, only becoming evident after some hours; and that a failure in diagnosis might occur from injury to other regions taking the attention from the abdomen. In discussing the diagnosis, Mr. Robson considered the symptoms and signs separately, and then collectively; remarking on the variability of the cause, the difference in the degree of shock, the usually rapid and feeble pulse, the constant presence of vomiting and of pain, and, later, the usual signs of peritonitis; but especially dwelling on the importance of altered liver dulness, which when normal is almost proof of absence of perforating wound of the alimentary canal, and when diminished is suspicious of perforation, but when absent is almost pathognomonic of rupture. He considered the combination of symptoms most to be relied on were shock, more or less severe, following immediately or within a short time on an accident, pain in the abdomen, moderately quick and soft pulse, vomiting of contents of stomach followed by bilious vomit, anxious countenance, and diminished or *absent* liver dulness. After showing that on expectant treatment no reliance could be placed, Mr. Robson remarked that the only hope of success lay in early operation, and consequently that a timely diagnosis was of vital importance, to attain which it would seem necessary that all cases of intra-abdominal injury should be both accurately observed and fully reported. For his own guidance he had adopted the following rule:—In cases where there is a reasonable belief that the intestine is wounded, as evidenced by the history, symptoms, and signs, exploration by a small median incision must be made, when, if there be any rupture of the bowel, flatus or serum tinged withe blood or feculent material will escape through the small peritoneal opening, which can then be enlarged and necessary treatment adopted; but should no flatus or fluid appear and the peritoneum prove to be healthy, the small wound can be closed, and no harm will have been done. (Lancet, Feb. 18, p. 323.)

Salt in Milk for Children.—Jacobi, in the Archives of Pediatrics for January, 1888, writes that the physiological effect of chloride of sodium is very important, no matter whether it is directly introduced through the mother's milk, or added as a condiment to cow's milk, or vegetable diet. Both of the latter contain more potassium than sodium, and neither ought ever to be given, to the well or sick, without the addition of table salt A portion of that which is introduced may be absorbed in solution; another part is, however, broken up into another sodium salt and hydrochloric acid. Thus it serves directly as an excitant to the secretion of the glands and facilitates digestion. Therefore during diseases in which the secretion of gastric juice

is interfered with, or in the beginning of convalescence, when both the secreting faculties and the muscular power of the stomach are wanting, and the necessity of resorting to nitrogenous food is apparent, an ample supply of salt ought to be furnished. The excess of acid which may get into the intestinal canal unites with the sodium of the bile in the duodenum, and assists in producing a second combination of chloride of sodium, which again is dissolved in the intestines and absorbed. Its action in the circulation is well understood; it enhances the vital processes, mainly by accelerating tissue-changes through the elimination of more urea and carbonic acid. A very important fact is also this: that the addition of chloride of sodium prevents the solid coagulation of milk by either rennet or gastric juice. Thus cow's milk ought never to be given without table salt, and the latter ought to be added to woman's milk when it behaves like cow's milk in regard to solid curdling and consequent indigestibility. Habitual constipation of children is also influenced beneficially, for two reasons: not only is the food made more digestible, but the secretions of the alimentary canal, both serous and glandular, are made more effective by its presence. (Medical News, Feb. 4, p. 122.)

STOMACH.—*Diagnosis of Diseases of the.*—Riegel contributes some observations additional to those which were published a year ago, of which an abstract appeared in this Journal for October, 1886. Another year's daily experience has confirmed him in the employment of the procedure which he then detailed. The author enters upon the consideration of the cases of chronic gastric disturbance observed during the last year; 134 in all, with 1709 chemical analyses. Of these, 16 cases were instances of carcinoma, on 5 of whom autopsies were held. In these 5 there had been made during life 154 analyses without ever detecting the presence of hydrochloric acid; nor had the filtrate from the gastric contents ever digested albumen. Not even on days when large doses of the acid had been given soon after the meal had there been free acid or peptic strength discovered at the examination. In 3 of the other 11 cases there had been at first a weak reaction for hydrochloric acid with a diminution of peptic strength, though even this entirely disappeared later. These cases must be considered instances of commencing carcinoma, since it is, of course, not to be expected that the acid will disappear suddenly. The author, therefore, reiterates his opinion that free hydrochloric acid and peptic strength are usually wanting in carcinoma, and that when constantly present they exclude absolutely the existence of this disease, no matter how suggestive the other symptoms may be. On the other hand, he has never maintained that their absence is proof of the presence of carcinoma, since this absence may occur in other diseases.

The statements of Cahn and v. Mering that in carcinoma of the pylorus hydrochloric acid is present in nearly normal quantity, and that the methyl-violet test is valueless, are, he believes, not well founded, for reasons which he explains. As regards instances of other gastric disorders, Riegel observed two cases, diagnosed simple gastrectasis, with constant failure of the free acid and of peptic strength. It is, however, possible, that these were in reality of a carcinomatous nature. The chemical examination of two cases of carcinoma of the œsophagus revealed nothing of diagnostic value. There were 42 cases of gastric ulcer under observation, and 382 analyses were made. In all of them the amount of hydrochloric acid was decidedly increased, and the digestion accelerated. Riegel thinks that the hyperacidity is primary, predisposing; and the ulcer secondary. With Ewald, v. d. Velden, and others, the author makes a sharp distinction between hypersecretion and hyperacidity. The first indicates a continuous secretion of the gastric juice, independently of the presence of food in the stomach. The second signifies an increase of the production of hydrochloric acid during the act of digestion. The latter not seldom occurs alone; the former is always accompanied by hyperacidity. In recent ulcer of the stomach hyperacidity alone exists, but later hypersecretion may be added to it, and gastrectasia then develop. The list of cases contains 18 instances of chronic hypersecretion and hyperacidity, in which 686 analyses were made. All of these cases exhibited an abundant production of gastric juice even when the stomach was empty—this being, of course, a pathological condition—all suffered from more or less gastrectasia, and in 12 there had been or still existed symptoms of ulcer. Ulcer has no causal relation to dilated stomach; both being results of hypersecretion. The constant presence of the gastric juice in the stomach, while favouring the rapid digestion of albumen, interferes greatly with the digestion of the amylaceous portion of the diet; hence remnants of food remain so long in that viscus that ectasia is produced. Hyperacidity alone may occasion an ulcer, but cannot occasion gastrectasia, since it causes no retention of the food in the stomach. Stenosis of the pylorus as the result of ulcer, is seldom the cause of dilatation of the stomach. Among the symptoms of hypersecretion are pyrosis, colicky pain, and often increased thirst and appetite. Another group of cases which he reports is formed by nine instances of chronic hyperacidity, there being no evidence of hypersecretion or of ulcer. Still another consists of subacute and chronic dyspepsia. Of this there were twenty-one cases with 105 analyses, in none of which was hydrochloric acid or pepsin permanently diminished to any noteworthy extent—thus confirming the author's former ex-

perience. In some of the patients there was an increase of the organic acids, and in a few slight hyperacidity was noted. Of nine cases of nervous dyspepsia in which twenty-eight analyses were made, only one exhibited any change of the gastric secretion; there being but a slight transitory hyperacidity. All of five cases of cholelithiasis were found to present a normal secretion, though twenty-four analyses were made. A very interesting case of severe dyspepsia, caused by the backward flow of bile into the stomach, confirmed the observations of the author made a year ago. The examinations made each day for seventeen days revealed neither free hydrochloric acid nor pepsin; but from the eighteenth day onward bile disappeared from the filtrate, and the gastric secretion returned to its normal character. In one or two cases of vomiting of pregnancy the author was able to obtain the contents of the stomach at a suitable time after eating, and found the secretion normal or even slightly hyperacid. Fifteen examinations in a case of phthisis with extreme dyspepsia showed always an absence of peptic strength and of free acid. The author believes that amyloid degeneration of the stomach was probably present here. Fifteen analyses in three cases of chlorosis revealed a slight increase of the amount of hydrochloric acid. A case of diabetes underwent four examinations, but without positive results. Two instances of acute febrile processes (erysipelas and typhoid) were each examined once with negative results. The absence of hydrochloric acid and peptic strength is not, therefore, a necessary result of fever. The author calls attention to the interesting fact that of the total number of cases of diseases of the stomach there were sixty-nine with hypersecretion and hyperacidity, and only nineteen with hydrochloric acid constantly absent. It is, therefore, not good therapy to prescribe hydrochloric acid and pepsin, or a light diet for every case of dyspepsia we meet. The actual condition of the gastric secretion must, first of all, be analytically determined. (Dr. Osler's Report, American Journal of Med. Sciences, Jan., p. 75.)

Tubercular Peritonitis.—*Abdominal Section in.*—At the Clinical Society on Oct. 28th, 1887, Mr. Lawford Knaggs, of Huddersfield, related the case of a girl aged sixteen years, with amenorrhœa of four months' standing, who came under treatment for a left-sided abdominal swelling. Some of the fluid was aspirated, and found of sp. gr. 1027, and to contain albumen, paralbumen, large granule cells and leucocytes. The diagnosis was ovarian cyst. On July 7th, 1886, the abdomen was opened; the peritoneum, mesentery, and intestines were found to be covered with myriads of pale pink gelatinous-looking tubercles the size of hemp seeds. The ascitic fluid was removed, and the peritoneal cavity washed out with many pints of warm water.

General improvement began from the date of the operation. The catamenia reappeared, and she gained 18 lb. in seven months. In March, 1887, she was very well, and went out to service, but the place was hard, and her health declined. Fifteen months after the operation there was no ascites, nor any evidence of the progress of the abdominal disease. She had, however, lost 8 lb. in weight, had morning expectoration, prolonged expiration over the right apex, and cessation of catamenia since July. The interest of the case was its bearing upon the treatment of chronic tubercular peritonitis. Reference was made to a case of laparotomy for intestinal obstruction recorded by the author in the Lancet, October, 1886. The patient was the subject of tubercular peritonitis. The obstruction was relieved, and the patient, who at the time was greatly emaciated, is now, after two years and a half, a stout and fairly healthy woman. The historical case of Sir Spencer Wells, in which the patient was alive and well twenty-two years after the operation; a similar one, recorded by Dr. John Hornan, of Boston, U.S.A., in which the patient was fat and in good health three years after the operation; three recently recorded cases by Dr. Naumann, of which, however, only one recovered; the remarkable experience of Mr. Lawson Tait, who claimed a uniform success so far as the operation was concerned, and a complete cure of the disease in 80 per cent. of all cases of tubercular peritonitis, in which the abdomen was opened, cleaned, and drained—all spoke to the feasibility and suitability of the procedure. Dr. Bantock had pointed out that after abdominal section there was complete immunity from ascites, whereas tapping was always followed by re-accumulation. Why did laparotomy give such satisfactory results? Possibly, as had been suggested by Dr. Cameron, of Huddersfield, by removing the toxic chemical products resulting from the life of the bacilli in the tubercles, and accumulated in the ascitic fluid, the absorption of which no doubt favoured the establishment of disease in other organs. The author thought that in certain cases more satisfactory and rapid results might be obtained in this way than by the methods generally employed. He suggested as the most suitable cases those in which the chief clinical symptom was ascites, and where the disease had not attacked or seriously impaired other organs. (Lancet, Nov. 5, p. 917.)

Tubercular Peritonitis.—Abdominal Drainage.—According to Schwarz and Hofmokl, drainage of the peritoneum for tuberculous peritonitis seems now to be attempted in a number of cases, and yields a large amount of success. Seventeen cases are recorded, all of which appeared to have been benefited, or at least not harmed, by the proceeding. In one case, in which death took place six months later, but little fresh fluid had been poured out; and cases of complete cure for ten, four, and two

and a half years and under are amongst the number. The *modus operandi* appears to consist in incising and washing out the peritoneum, and then usually closing it at once. In some few cases a drain is left in. The tuberculous character of the affection was usually demonstrated in some scraping or portion of peritoneum that was removed. (Practitioner, Jan., p. 69.)

AFFECTIONS OF THE URINARY AND GENERATIVE SYSTEMS.

ALBUMINURIA.—[Dr. Mariani Semmola, of Naples, deduces the following practical conclusions from recent experimental investigations into the pathogenic conditions of albuminuria.]—1. We should absolutely give up the idea still current in practice that albuminuria must always coexist with nephritis. The most frequent case of chronic albuminuria is that in which albumen filters through the kidneys because of defective assimilation of albuminoids. 2. We must abandon the idea still held by many, that we can supply the loss of albumen by a highly nitrogenous diet, because this can only increase the albuminuria, the overloading of the organism with nitrogen only augmenting the defective assimilation of albuminoids. On the contrary, as soon as albumen is seen in the urine we should at once have recourse to a milk diet, which in a few days is sufficient to cause the albumen to disappear, or at least to decrease considerably. 3. We must banish astringents of every kind in treating albuminuria, especially that of Bright's disease, because we must recognize that the elimination of albumen by the urine is for a definite and necessary purpose, and that by reason of this incessant effort the organism maintains its integrity. The use of gallic acid as an astringent has happily done neither harm nor good, because it was based upon a pharmacological error, for gallic acid is not an astringent, but we still find that certain very powerful styptics, like the preparations of lead and iron, which are unquestionably injurious to patients, are recommended, and I have often found their effects to be very dangerous, aggravating the principal disorder where they succeed in diminishing the filtration of albumen by their action on the capillaries. (Medical News, Oct. 15, p. 445.)

Albuminuria.—Its Incidence among the Sick.—[Professor Grainger Stewart, following up his researches upon the incidence of albuminuria among the healthy, has recently been engaged upon an inquiry into the distribution of albuminuria among patients in private pactice (150); indoor infirmary patients (150); outdoor infirmary patients (100); children in hospital (50); patients in fever hospital (50); maternity patients (25). The results of this laborious inquiry are recorded in tables pub-

lished in a paper read before the British Medical Association in June, 1887. The following are the main conclusions drawn by Dr. Stewart from his statistics.]—1. That as in health, so in disease, albuminuria is much more common than is generally supposed. 2. That it is more common among patients of adult age than among children. 3. That cases of Bright's disease do not account for one-half of the cases of albuminuria met with in practice. 4. That they account for more than any other individual cause. 5. That next to them rank the changes in the renal circulation due to cardiac and other maladies, and accidental cases due to the admixture of blood, pus, &c., with the urine. 6. That so far as this series of observations shows, cyclical, dietetic, and simple persistent albuminurias are rare. 7. That while in Bright's disease, especially the waxy and cirrhotic forms, the quantity of albumen is at first so slight as to be shown only by picric acid, it yet is more abundant than in albuminuria due to other causes. 8. That in the digestive and nervous cases, and those due to high temperature, the quantity is often so small as only to be discovered by picric acid. (British Med. Journal, Oct. 15, p. 817.)

Bladder Affections.—*Local Treatment.*—Ulzmann, of Vienna, critically reviews the use of the vesical douche, and reaches the following general conclusions and rules for practice. First, he excludes from treatment by the vesical douche all acute affections of the bladder; such diseases, if they heal at all, do so with dietetic and medicinal treatment. In chronic inflammations of the bladder we must discriminate whether the trouble is primary and isolated or, whether in addition to the bladder, the vesical neck, posterior urethra, or prostate is affected. If the latter be the case, as in young men who from gonorrhœa contract chronic vesical catarrh, the neck of the bladder and the posterior urethra must be included in the treatment. This is best accomplished by introducing a soft catheter or small silver catheter in the bladder and then withdrawing it about an inch, so that the point of the catheter is in the neck of the bladder; with a small syringe the solution is slowly injected. The fluid enters the bladder but does not return into the catheter, as its fenestra is closed by the neck of the bladder. After all has been injected the catheter is withdrawn, and the patient empties the bladder spontaneously. If, on the other hand, the bladder itself is implicated, the fluid is injected through a catheter giving a double current and allowed to return. As the bladder is contracted, but a small portion of its mucous membrane will be reached by the fluid. It is best to inject the fluid through a soft catheter, using a syringe held in the hand. When irrigators are used too much fluid is introduced, and if the bladder is weak it may be dilated. Only in rare cases of contracted bladder in young

persons is this method useful. The precaution must also be taken to empty the bladder thoroughly after each injection. When possible, it is best if the patient stand during the irrigation. For irritable bladder Ulzmann advises lukewarm water with tinct. opii, cocaine one-fourth per cent., resorcin one-half per cent., carbolic acid one-sixth per cent. when especially irritable. When the urine has undergone ammoniacal decomposition, solution of potassium permanganate one-tenth per cent. or three drops of amyl nitrite to a pint of water are recommended; for phosphaturia one-tenth per cent. salicylic acid is advised. (Therapeutic Gazette, Oct. 15, p. 692.)

Chronic Bright's Disease.—*Mental Affections Associated with.*—At the Philadelphia Neurological Society, on Oct. 24th, 1887, Dr. William Osler said it is well known that certain mental phenomena occur in connection with chronic renal diseases besides simple uræmic coma. He had reported one case of violent mania in a man aged forty-two years, the subject of Bright's disease. When brought to the hospital, he had been maniacal for three or four days. He subsequently became comatose and died. A very interesting case was recently under his care in the University Hospital. A man was brought to the hospital Thursday evening. He saw him on Saturday. He was then quiet, in a semi-dozing condition, but could be aroused and gave a very intelligent account of himself. The whole clinical picture was that of chronic interstitial nephritis. He thought it not improbable that the man might pass into a condition of coma. There was nothing to attract special attention to his mental condition, and he did not regard his condition as critical. That night he got out of bed in the absence of the attendant, wandered about the ward and finally jumped out of the window. It was subsequently learned that, before admission to the hospital, he had been violent, requiring two or three men to hold him. We were not told this when he was brought to the hospital. He had no doubt that this was an instance of mental disturbance due to chronic nephritis. He was told by one of the physicians who had attended him that the man was full of delusions. He thought that his wife and others were persecuting him. In another case there was also a medico-legal question. It was whether or not the man was in a condition to make a will. There was no doubt as to the existence of chronic Bright's disease. The mental condition was peculiar. He believed that his wife and others had designs upon his life, and it was with difficulty that he could be persuaded to take food. He thought that people were persecuting him. Although he gave a very intelligent account of himself, it was not considered advisable that he should make his will at that time. He was placed upon a somewhat more active treatment than he had

previously received. This man subsequently did well, his mind had cleared, and he recovered sufficiently to get about and to make his will. (Medical News, Nov. 19, p. 603.)

Chronic Bright's Disease.—Cannabis Indica as a Hypnotic in.—In cases where there is distressful sleeplessness, and general inquietude, rendering the sufferer's condition most miserable, where the heart is enfeebled as well as over-taxed and chloral seems inadmissible, or, on account of the engorged state of the lungs or the defective action of the kidneys, opium must be avoided—in such cases, the administration at bedtime of ♏xv —xx of the tincture of cannabis indica, combined with a small dose of chloral (grs. x), and ℥ss of bromide of potassium will often act magically in giving not only sound and refreshing sleep for several hours, but also in greatly alleviating the general disquietude and distress of the patient; and that this effect is to be attributed to the cannabis indica and not to the combination of chloral and potassium bromide (as might by some be supposed), I have assured myself of by check experiments both on the same and on different patients, on many occasions. (Dr. J. F. P. McConnell, Bengal Med. Ser., Practitioner, Feb., p. 98.)

Cocaine in Urethral Operations.—Dr. Alexandro Settier gives in a Spanish medical journal his experience of the employment of cocaine as a local anæsthetic in operations of various kinds on the urinary organs. He has used it in nine cases of internal urethrotomy, one divulsion (forcible dilatation), two urethro-perineal fistulæ operations, one rapid lithotrity, three circumcisions for complete phimosis, and two extirpations of vegetations. In none of these eighteen cases has he observed any serious toxic symptoms such as have been described by Peck, Reich, Bellyarminoff, and Keyser. In three cases, however the patients complained of severe headache and great dryness o the mouth. The solutions used were generally of the strength of 5 or 6 per cent. For internal urethrotomy a variable quantity (in one case as much as five drachms) of the solution was introduced into the urethra, as near as psssible to the seat of the stricture, by means of a catheter in the form of a simple tube open at both ends. This solution was allowed to remain in contact with the tissues for twenty-five minutes before the operation was commenced. In all cases of this description the cocaine succeeded admirably, the patient feeling no pain at all except at the moment when the stricture was divided, and then only in a very slight degree. The action of the drug was much less satisfactory in the single case of forcible dilatation, but the pain lasted a much shorter time than it does in similar cases where no anæsthetic is employed. No effect was produced in the cases of urethro-perineal fistulæ. In the lithotrities, circumcisions, and the operations on preputial vegetations very good results were

obtained. In the two latter classes of cases the cocaine was combined with glycerine or vaseline in the proportion of 1 to 15; this was applied over the surface of the prepuce. In one of the phimosis cases an 8 per cent. solution was likewise injected under the prepuce. This, however, caused a good deal of headache. Dr. Settier remarks on the importance of keeping the solution a long time in contact with the mucous membrane of the bladder in cases of lithotrity, in order to prevent contractions of the organ taking place during the process of aspiration. (Lancet, Feb. 25, p. 380.)

DIABETES.—*Its Connection with Obesity.*—In the Berliner klin. Wochenschrift, 1887, Prof. Kisch, of Prag-Marienbad, has an interesting article in which he endeavours to show the close relation between obesity and diabetes mellitus. Seegen (Beiträge, Virchow's Arch.) showed the frequent development of diabetes in obese persons, 30 out of 100, according to his analysis, having been excessively fat in the beginning of, or prior to, the glycosuria. Nevertheless, the fatty habit has always been looked on as an uncertain etiological factor. Kisch affirms that in general obesity there is frequently temporary glycosuria, in some cases of which sugar is present in the urine in large amounts. The duration may be long or short, and the patient not sensibly affected. Still, such a condition must be looked on as unfavourable. The glycosuria sometimes becomes permanent, so that the temporary attacks must be considered as forerunners of the diabetes. In all cases where hereditary obesity comes on in youth and progresses rapidly, and in non-hereditary cases where treatment is not beneficial, diabetes must be looked out for. Of the former one-half, of the latter fifteen per cent. become diabetic. In many families it can be shown that some members are fat from childhood and others are diabetic, or the fat individuals become diabetic about the fourth decade. This is shown very well by three tables, giving the number of obese and diabetic members of three generations in each of three families. In the transitional cases the change is gradual. The individual loses his fat, though the appetite and digestion remain good and there may be no thirst or increased urination. At last, thirst or an attack of boils causes a urine examination, and sugar is found, usually in small amounts. Frequently calcium oxalate is present in large quantity. In such cases the course of the disease is slow and mild. Diet and proper remedies suffice to keep the patients alive many years. The causes of the condition are not altogether clear. It is evident that errors in diet do not enter largely into the causation of hereditary cases. Kisch inclines to the belief that the muscles, becoming infiltrated with fat, are unable to convert sugar into glycogen. The chief thing is a congenital abnormality of tissue, by reason of which fat is

not used up and sugar not fermented or oxidized. (American Journal of Med. Science, March, p. 293.)

Diabetes Mellitus.—Pains, Ataxia, &c.—It is only somewhat recently that my own attention has been fixed upon the matter, and the number of cases I find to be affected in the manner I am going to mention is striking. The remark does not apply to young subjects, but to persons beyond the middle period of life. I used to come across persons who complained of pain in the legs, put down as cases of gout or rheumatism ; and I took it as simply coincidental to the diabetes, without anything important in it. But I so frequently met with it that my attention became aroused, and now I find many subjects of diabetes beyond the middle period of life thus affected. There is also more or less ataxia. It is not exactly the pure form of ataxia that is seen in locomotor ataxia, because I have noticed that these persons can stand, maintaining their balance fairly well with their eyes shut. Yet they walk with some difficulty. They cannot properly maintain their balance. They feel often compelled in walking to pull themselves together and make an effort to walk steadier, lest persons behind them may think they have been taking too much. This is what has occurred to me over and over again to hear. Then, again, with this, there are usually associated some anæsthesia, and hyperæsthesia, and various forms of paræsthesia. Persons feel as though they were walking on pebbles. The flesh is tender, so that when the leg is grasped it gives pain. This comes oftener in the legs than in the upper extremity; sometimes, however, it affects the upper also. Then there is an aching of the bones. The patient complains of it especially at night, in bed. The condition appears to be due to peripheral neuritis. (Dr. Pavy, Medical News, Sept. 24, p. 360.)

Diabetes Mellitus.—Treatment.—It would be a hard and oppressive life to devote one's self only to the treatment of diabetes occurring in young subjects. But the successes obtained in treating the disease in patients of a more advanced age compensate in a measure at least for the failure in young persons. We must first avoid feeding the disease, and whilst doing this endeavour to convert the wrong action of assimilation into a right one. I lay the greatest stress on diet. I do not think that we can get along in the management of these cases without strict attention to diet. There must, then, be the proper articles of food provided. It is easy enough for the patient to avoid taking some articles of food, as sweets, pastry, puddings, potatoes, &c., but it is not so easy in the case of bread. What he may take may be summed up as consisting of any kind of meat, fish, poultry and game, with eggs, butter, cheese, the various forms

of green vegetable food, and a prepared substitute for bread. Milk should only be taken to a limited extent. Some authorities have recommended the free use of milk. But milk contains sugar and milk-sugar behaves in the system exactly as any other form of sugar. I have found that where milk has been taken in large quantity, the sugar has been kept up in the urine; whilst when the quantity of milk was reduced, the state of the urine improved. Certainly it is a hardship for a patient to abstain from bread, and you want to make it as easy as possible for him, by substituting something else of a palatable nature for the article prepared from wheaten flour. I do not think bran, which is often used, is a good substitute, because it contains from 40 to 50 per cent. of carbohydrates, and very little else that can be digested and applied. Gluten is better, but it contains a considerable amount of starch. If the gluten is good, it contains only from 30 to 33 per cent.; but I have found some specimens containing 70 to 80 per cent. Perhaps there is no article of food better suited to the diabetic than the almond. There is nothing which seems to supply him better with what is wanted. The almond, rich as it is in nitrogenous material, rich as it is in oily material, is just the article of food to meet his requirements, and palatable products, as a substitute for bread, may be prepared from it. *Medicinal Treatment.*—As far as my experience goes, nothing contributes so much to arrest the disease as opium, morphia, and codeia. It is difficult, of course, to say, when you are treating a case with one of these remedies in conjunction with diet, whether the good result you get is not solely the result of dieting. But my own experience is to the effect that my practice, ever since I have been giving these, has been much more satisfactory than it was before I gave them. Clearly these agents appear to exert some power in controlling the disease. It is my custom when I get a patient of forty-five to fifty years of age to put him at once on small doses of opium, morphia, or codeia, and gradually increase. The sugar in the urine diminishes and usually disappears. After a while I permit the patient to take a little bread—say, two ounces a day. If he takes this without a return of sugar I let him gradually increase the quantity until he takes four or six ounces per day. Then I say to him you had better let well alone and stop at this, knowing how readily harm may be done by going beyond what can be taken without occasioning the passage of sugar. As long as sugar does not exist in the urine there is nothing to interfere with a healthy state being maintained. The patient is, to all intents and purposes, in a natural condition as regards his general state. It is only with the voidance of sugar that we get the symptoms of the disease and untoward results. (Dr. F. W. Pavy, Philadelphia Medical News, Sept. 24, p. 360.)

Diabetic Bread.—Formula for.—Six eggs are thoroughly beaten, and then a teaspoonful of baking-powder, or its chemical equivalent, and a quarter of a teaspoonful of salt are added, and again the eggs are beaten. This mixture, poured into hot waffle-irons smeared with butter, is baked in a very hot oven. For variety and to make these biscuits seem more like coarse bread, pulverised nuts of those permitted may be added. They may be eaten hot with butter and cheese, but will remain good for a long time, and nobody would suspect that they were destitute of flour. (Dr. O'Donnell, New York Med. Journal, Jan. 7, p. 19.)

Electric Illumination of the Male Bladder and Urethra.—At the Medical Society of London, on January 23rd, Mr. Hurry Fenwick showed a series of instruments made by Leiter, of Vienna, and Hartwig, of Berlin, armed with incandescent lamps for illuminating the male bladder and urethra, and demonstrated their capabilities upon patients and "dummies." He observed that endoscopy had attracted the attention and efforts of the profession since the commencement of the century, but the candle power hitherto used had proved insufficient. Quite recently (1887) however, the smallest Edison lamp had been employed, and the result had been brilliant. Instead of a cumbersome, costly, and fickle instrument like the Nitze-Leiter endoscope of 1880, we now possessed a simple, practical, and safe apparatus by which the bladder or urethra could be examined in as strong a light as if it was viewed by direct sunlight. (See *woodcut* and description at p. 328 of this volume.) Every detail of the vesical or urethral surface was discernible, under favourable circumstances, even to the small vessels coursing over the mucous membrane. Mr. Fenwick mentioned certain elements necessary for a successful bladder examination, and explained that the vesical endoscope needed much practice and patience before the observer could become proficient with it. He believed that the value of electric endoscopy could hardly be estimated, and he predicted that it would at once assume a high rank in the diagnosis of obscure vesico-urethral disease, and would become almost as indispensable as the opthalmoscope or laryngoscope. (Mr. Schall showed various batteries for working the endoscopes.) Mr. Walsham bore testimony to the ease with which he had been enabled to see a stone in a dummy bladder. (British Med. Journal, Jan. 28, p. 193.)

Intra-Peritoneal Rupture of the Bladder.—*Abdominal Section; Suture of the Bladder; Recovery.*—Mr. W. J. Walsham relates the following case: C. H., aged 22, was admitted March 1st, 1887, into St. Bartholomew's Hospital. He had been drinking the night before, and in a fight was butted by his opponent in the abdomen, his bladder being full at the time. He

passed a night of great agony, and was brought in a cab to the hospital the following morning, but he was then suffering very little shock, and walked into the surgery with the assistance of two friends. He complained of pain in the lower part of the abdomen, and of having been unable to pass any urine since the blow, although his bladder was uncomfortably full at the time. The perineum was natural, and there was no history of stricture. On passing a catheter no urine flowed, although the point was ascertained to be in the bladder by the finger in the rectum. On depressing the handle the catheter was felt to free itself with a jerk, and its point could be then felt more plainly than natural through the abdominal walls. Bloody urine now escaped, the flow varying with respiration. About twelve hours after the injury Mr. Walsham opened the abdomen, and having discovered an intra-peritoneal rent in the posterior wall of the bladder, sewed it up with nine Lembert sutures. The sutures were passed through the muscular and peritoneal coats only, and one was placed above and below the upper and lower angles of the wound respectively. The bladder having been forcibly injected with eight ounces of boric acid solution and found watertight, the peritoneum was irrigated with about two gallons of warm boric acid solution, and the abdominal wound closed as in ovariotomy. A catheter was left in the bladder for two hours, and the patient subsequently reminded to pass his urine every four hours. There was little shock, and the patient recovered. Daily notes were given at length. The author remarked that there had now been seventeen cases in which abdominal section had been performed for rupture of the bladder, three extra-peritoneal and fourteen intra-peritoneal. Of the three extra-peritoneal cases two died and one recovered. In the successful case the wound in the bladder was secured to the abdominal wall but not sutured. In the fatal cases death was due to shock. The rent in one was found securely sutured at the post-mortem examination; in the other the rupture had not been discovered on opening the abdomen. Of the fourteen intra-peritoneal ruptures the rent in the bladder was sutured in eleven, and in three a drainage tube was placed in the wound but no sutures employed. Of these three one recovered and two died, death being due to peritonitis and suppression of urine respectively. Of the eleven cases where the rent in the bladder was secured by sutures five recovered and six died, death being due in three cases to peritonitis, in two probably to shock, and in one to hemorrhage from a perineal incision employed for exploration. In the three cases of peritonitis the sutures had given way in one, and a leakage had occurred in the lower part of the wound in the other two. In the five successful cases Lembert sutures were employed, and the peritoneum was washed out, and in only one was a

drainage tube used. The author discussed (1) the advisability of early operation; (2) the importance of using a suture which will not become softened too soon, and of ascertaining before closing the abdominal wound that there is no leakage from the bladder; (3) the cleansing of the peritoneal cavity; (4) the inadvisability of a preliminary incision in the perineum, or of a subsequent incision in that region for the purpose of drain; and (5) the question of tying in a catheter after the operation. A table of the seventeen cases was given, sixteen of which are in Sir William MacCormac's table appended to his work on Abdominal Section. (British Med. Journal, Jan. 28, p. 191.)

Supra-Pubic Prostatectomy for Enlarged Prostate.—At the Clinical Society, on Nov. 11th, 1887, Mr. McGill related three cases where the operation had been successfully performed. The operation consisted in opening the bladder above the pubes in the usual manner, and removing with scissors and forceps that portion of an enlarged prostate which prevented the outflow of urine. *Case* 1 had suffered from urinary symptoms for seven years, and had not been able to pass urine without a catheter for seven months. Six calculi, weighing 174 grains, and a portion of prostate as large as a walnut, were removed by supra-pubic incision. The patient made a speedy recovery, and did not require to use a catheter. *Case* 2.—Symptoms of prostatic enlargement for two years; acute symptoms for a fortnight, fœtid urine, and frequent micturition. He was treated for three weeks by ordinary methods without benefit. The middle lobe of the prostate the size of a bean was removed with immediate benefit. He left the hospital on the twenty-seventh day with the wound healed, and passing water without difficulty. *Case* 3.—Prostatic symptoms for six years; acute symptoms of greater and less severity for three years. On admission into the hospital he was found to be extremely ill. He vomited all his food, had constant diarrhœa, and passed putrid urine, which deposited one-third of its bulk of pus. On opening the bladder, the ureters were felt to be much dilated. The projecting portion, the enlarged prostate, was removed. He made a quick and satisfactory recovery, and was able to micturate without difficulty. The benefits derived from the operation were of two kinds: first, acute symptoms were relieved by the drainage of the bladder; and secondly, the cause of these symptoms was removed by excision of a portion of the enlarged prostate. As yet the operation had only been practised in acute and urgent cases, but it was not improbable that in the future it might be resorted to before any acute symptoms supervened. (British Med. Journal, Nov. 19, p. 1104.)

[See also Mr. McGill's article on Hypertrophy of the Prostate and its Relief by Operation at page 320.]

VILLOUS GROWTH (PAPILLOMA) OF THE BLADDER.—*Symptoms.*—Now the symptoms of vesical tumour present nothing special at the outset; a little undue frequency of micturition is then commonly the only sign, and excites no suspicion as to the real cause. But early in the progress of papilloma there is an important sign, characteristic of it throughout its entire course, and common to most other tumours at a late period, namely, the appearance of blood in the urine. A single hemorrhage occurs after exercise, thus resembling that from calculus, hence its presence is often suspected, but with certain differences which you may advantageously note. First, the hemorrhage from papilloma is generally much more abundant than that of calculus; and, secondly, it is mostly unaccompanied by pain and irritation of the bladder. As the case advances, hemorrhage becomes more frequent; pain, however, is still rarely complained of unless obstruction to the outflow of urine is occasioned by clots. Such a history should always arouse great suspicion. The symptoms described have very commonly, until recent time, been attributed to "congestion of the kidney," a rare, if not unknown occurrence, without the presence of other symptoms than those which have been named. And a careful inquiry should be made in order to determine the diagnosis. Endeavour first to learn whether the patient has ever observed that the act of micturition sometimes commences by passing urine natural in appearance, but becoming stained or mixed with florid blood towards the close. If so, the source is vesical, possibly prostatic, at all events not renal, but is more probably the result of tumour. When blood comes from the kidney, it is almost invariably mixed with the urine, and unless it is very recent indeed, it is brownish, not florid in tint. Occasionally, although very rarely, florid blood may appear first and clear urine afterwards, but the reverse is the almost invariable rule. Secondly, a microscopic examination of *débris* passed in the urine must be diligently made, and before long the characteristic appearance of papillomatous structure will, if present, generally be discovered. The bladder may be washed out with plain water, especially after an examination by sounding, in order to obtain the evidence in question. Why not sound the bladder, as we do for a stone, and determine the question thus? For this reason, that the question is not thus determinable. The soft, filmy tissues, even when springing from a thick base, cannot be felt floating in a fluid medium, and yield no evidence to the sound. Nor does rectal examination afford a sign unless the bladder is distended by the growth, when the organ feels rounded, but very soft, as if filled with fluid. (Sir Henry Thompson, p. 307.)

[See Sir H. Thompson's remarks on the Treatment of Papilloma of the Bladder at page 309 of this volume.]

AFFECTIONS OF THE BONES AND JOINTS, ETC.

Dislocation of the Thumb Forwards.—H. P., aged 9 years, was brought to me on Jan. 27th. He stated that he had been thrown down by a boy in the school playground, falling on his right hand. On examination I found a deep depression on the dorsal aspect of the thumb at the metacarpo-phalangeal joint, the first phalanx of the thumb being dislocated and displaced, so that the base of the bone reached nearly to the centre of the palm. Failing to reduce it, I put him fully under chloroform, and then found the base of the first phalanx apparently held tightly by the two heads of the flexor brevis pollicis, exactly as the head of the metacarpal bone is held in the common backward dislocation. I pressed the phalanx still further into the palm of the hand and tried extension, but the most powerful effort I was capable of failed to produce any result. I then placed the fingers of both my hands on the dorsal aspect of the joint, holding the muscles firmly forwards and towards the centre of the palm, and, applying both my thumbs to the base of the phalanx, I pressed it upwards and towards the radial side, when I was pleasantly surprised to find the bone glide easily into its place. The thumb was then flexed a few times, to disengage any tissues that might have been in the way, and the hand put up in a stiff case for a few days. The case may be of interest on account of its rare occurrence. Mr. Holmes, in his Treatise on Surgery, dispatches it in three lines, merely saying that four examples are related by Nélaton, one of which remained permanently irreducible. (Mr. E. T. Simson, Lancet, Feb. 11, p. 273.)

Flannel *versus* Rubber Bandages.—There are contingencies constantly arising in which it becomes necessary to apply a bandage, and it depends much upon the skill with which it is applied, as to whether beneficial, negative, or positively bad results are to follow. A properly applied bandage gives comfort, and in numerous instances exerts a positively curative effect, and this effect may be materially influenced by the fabric out of which the bandage is made. It is not a matter of indifference as to the material used for the bandage. In many instances muslin torn into narrow strips is used for all purposes; but it is as rational to use one drug exclusively in the treatment of any given disease as to use the same material in every case in which it is desirable to apply a bandage. For the retention of wound-dressings, thin materials, as gauze, or cheese-cloth, are much preferable to muslin, as they can be applied better, and do not slip so easily; whilst for the retention of splints, in the treatment of fractures, there is a tendency to replace bandages with adhesive plaster, which holds more firmly, and has the advantage of leaving the seat of injury open to inspection. When firm

compression is desired, as in the treatment of ulcers of the lower limbs, muslin is generally used; but of late years it has become fashionable to use Martin's pure rubber bandage, especially when there is a varicose condition of the veins; and it must be admitted that, in many instances, admirable results are obtained by its use. It has, however, some very great disadvantages, due to the fact that the secretions of the skin cannot pass through the bandage, and the limb is constantly bathed in perspiration. This is not only unpleasant, but—in hot weather especially—the parts become offensive, and unless great care is exercised, and even when every precaution is taken in some cases, an eczematous condition is produced, which is distressing to the patient and aggravating to the local affection. Aside from these objections, the heat of this bandage is very unpleasant during the summer. For these reasons we prefer a good quality of flannel to any other material for bandaging the limbs. Flannel absorbs the perspiration, and neither produces nor aggravates an eczematous condition of the skin; it is sufficiently elastic to supply the pressure which may be desired, and the roughness of its surface effectually prevents its slipping. It is the coolest bandage which can be effectively applied, owing to its capacity for absorption, and, in our experience, has answered a better purpose than any other material. (Editor of Medical News, Sept. 24, p. 364.)

HAMMER-TOE.—At the Medical Society, on March 19th, 1888, Mr. William Adams read a paper on the Successful Treatment of "Hammer-toe" by the Subcutaneous Division of the Lateral Ligaments. After some observations on the pathology of hammer-toe, in the course of which the author observed that this contraction with deformity, which usually affected the second toe, was essentially an hereditary affection, often traceable through two or three generations; he said it was never caused by short or narrow boots, although they might aggravate the affection. In a slight degree, the tendency to hammer-toe was often traceable at five years of age, and the contraction steadily increased, but seldom became confirmed until the age of fifteen. He then alluded to the observations brought before the Pathological Society (Dec. 21st, 1886) by Mr. Shattock, who had dissected two hammer-toes recently amputated, and had found that the deformity essentially depended upon a contracted condition of the lateral ligaments, and not upon contraction of the flexor tendons. In reference to treatment, the author described an operation which he had successfully practised for many years, essentially consisting in the subcutaneous division of the lateral ligaments. After having observed the failure of tenotomy to cure this contraction, he had adopted the method of dividing the lateral ligaments, and the correctness of this conclusion was now confirmed by Mr. Shattock's dissection.

Immediate extension was adopted after the operation, and the toe retained in position by a metal splint for three or four weeks. Mr. W. Anderson also had suggested a new operation, that of excising the head of the first phalanx, which he successfully performed. This operation, which is described in the Clin. Soc. Trans., vol. xx., p. 248, would be applicable to cases which could not be treated by the subcutaneous operation, and would supersede the necessity of amputation, which had generally been adopted in severe cases. (Lancet, March 24, p. 575.)

Iodoform Wicking for Drainage.—Gersung, of Vienna, has found wicking impregnated with iodoform an excellent material for tampons in the drainage of wounds whose secretion is moderate; in Billroth's clinic wicking saturated with tannin and iodoform is used with excellent results. Its removal is much less painful and inconvenient than that of gauze. (Medical News, Sept. 24, p. 362.)

Psoas Abscess.—*Treatment by Lumbar Incision.*—At the Medical Society, on Dec. 19th, 1887, Mr. Bernard Pitts exhibited two cases of psoas abscess treated by lumbar incision. The first was a boy aged twelve, who had pain in his lumbar spine for several months, followed by formation of abscess, which had been evacuated by a free lumbar incision. A finger introduced into the wound detected extensive carious excavation of the front of the bodies of several lumbar vertebræ. The boy was kept at rest in bed for eight months, when well-marked angular curvature was manifest. For the last six months a poro-plastic jacket had been worn, and the discharge, which was now exceedingly small, was received into an iodoform dressing changed once weekly. The second case was a man aged twenty-nine, who had a fluctuating swelling in the left groins of ten weeks' duration, apparently unassociated with injury or spinal disease. The groin swelling was opened by a small incision and a large counter-opening made in the loin. Two months afterwards he left the hospital with the wound soundly healed. Both were treated antiseptically. Mr. Pitts spoke of the almost uniform success now obtained in dealing with psoas abscess, more particularly in children. In the boy the lumbar incision enabled the extent of the mischief to be accurately gauged, and prolonged rest in bed commensurate with its gravity to be decided on. It would have been difficult to have included safely and comfortably an inguinal incision in an antiseptic dressing. The abscess in the second case, he thought, was more probably due to some carious spot which the finger failed to reach than to primary suppuration in the psoas, consequent possibly on strain. He would never open a psoas abscess unless he could obtain a lumbar drain; he regarded syringing unnecessary unless the pus were offensive or curdy. (Lancet, Dec. 24, p. 1270.)

RHEUMATOID ARTHRITIS.—*Its Nervous Origin.*—At the Royal Medical and Chirurgical Society, Nov. 22nd, 1887, Dr. Archibald E. Garrod introduced a paper entitled a Contribution to the Theory of the Nervous Origin of Rheumatoid Arthritis, of which the following is an abstract:—Some of the arguments which have been put forward in support of the view that rheumatoid arthritis is a disease of nervous origin are examined in the light of a large number of cases. The statistics given are based upon a series of 500 cases. Arguments are adduced in support of the following propositions: 1st. That the causes of rheumatoid arthritis are such as might be expected to act upon the central nervous system. 2nd. That the distribution of the lesions is such as would be likely to result from nervous lesions. 3rd. That the distribution of the lesions is similar to that of certain arthropathies of spinal origin. The influence of heredity is first discussed. In 216 cases out of 500 there was a family history of joint disease, sometimes of more than one variety. There was a history of gout in 86, of probable gout in 10, of rheumatism in 64, and of other conditions which may be classed together as probably rheumatoid arthritis in 84. These figures can only approximate to accuracy as they are based upon information given by the patients. The influence of uterine causes is next discussed, and it is shown that when the female cases are arranged according to the age of the patients when the disease commenced, there is a steady increase in numbers up to the period of the menopause and a steady decrease after that period. Amongst the male cases there is no such regularity. Of the 500 patients 411 were women, and only 89 men. The influence of anxiety and care, mental shock, injuries, damp, cold, and previous rheumatic attacks, are discussed, and each of these is shown to have a share in the causation of the disease. Stress is laid upon the extreme symmetry of the joint lesions in rheumatoid arthritis, and some examples are adduced. Reasons are given for believing that there is a tendency for the joint lesions to advance up the limbs from the periphery towards the trunk. This order of invasion is by no means constant, but in particular instances it is well marked. In the localised form of the disease it is of course absent. The knees rank only second to the hands in liability to rheumatoid arthritis. Lastly, it is shown that there is a close resemblance between the distribution of the joint lesions in rheumatoid arthritis and in the recorded cases of arthritis following spinal concussion, whereas in more local spinal injuries one or more large joints are usually affected, as in tabes dorsalis. The associated nervous phenomena, such as muscular wasting, increase of tendon reflexes, &c., are regarded as secondary to the joint lesions, and as therefore lending no efficient support to the theory of the nervous origin of rheumatoid arthritis. (Lancet, Nov. 26.)

Scapulo-Humeral Peri-Arthritis.—*Treatment by Methodical Massage.*—(Berne, *L'Union Medicale*).—This affection is generally due to traumatic injuries, and both gout and rheumatism act as predisposing causes. Systematic massage is the most powerful, and at the same time the most sure curative measure. Electricity and hydrotherapy may be combined, but the two latter are insufficient to produce a cure. The patient to undergo massage for about a quarter-of-an-hour daily, the shoulder then to be enveloped in a wadded bandage. Amongst the movements to be performed, the author recommends most strongly that of abduction, with rotation inward and propulsion of the patient's hand towards the scapula of the opposite side. Twenty to thirty séances suffice as a rule to produce a definite cure. (Dr. Hyla Greves's Report, Medical Chronicle, Dec., p. 205.)

Spina Bifida Occulta and its Relation to Ulcus Perforans and Talipes Varus.—(Bland Sutton, *Lancet*).—This deformity is defined as a defect in the arches of the vertebræ, but without any tumour appearing externally. Four cases, previously reported by Virchow, Recklinghausen, and others, are collected, and one is added by the writer. In every case the deformity has been accompanied by a luxuriant growth of hair, usually limited to the lumbar region over the vertebral fissure, but in one case the growth covered the body. Virchow has compared this hairy growth to the tuft of feathers on the head of the Polish fowl and the accompanying cranial defect beneath. Congenital club-foot was associated in several cases, and in three "perforating ulcer" of the foot existed, these persons being usually seen in adult life. Recklinghausen examined the nerves of one of these patients after amputation, and found no changes; there was, however, a considerable degree of hypertrophy of the muscular coats of the arteries. Sutton made a similar observation in his own case. (New York Med. Journal, Oct. 1, p. 391.)

Stiff Great Toe in Adolescents.—At the Medico-Chirurgical Society of Edinburgh, on July 6, 1887, Mr. J. M. Cotterill read a note on the Condition of Stiff Great Toe in Adolescents, of which the following is a short abstract:—The condition, as discussed in several papers by various surgeons, was known by the following symptoms:—(*a*) Apparent flexion of the first phalanx of the toe on its metatarsal bone. (*b*) Inability to dorsiflex the toe, more or less complete. (*c*) Pain felt in efforts to dorsiflex the toe, as, for instance, in the act of standing on tiptoe. This pain is usually felt over dorsal aspect of joint; at a later stage it may be most marked below the joint, or it may be absent throughout the whole course of the case. Mr. Cotterill criticised the views expressed by many surgeons as to the causation of this disease. Amongst others the following causes have been given:—(1) Injury followed by contraction (Davies-Colley).

(2) Improperly fitting boots (several surgeons). (3) Gout, rheumatism, or rheumatoid arthritis (various). (4) The development of puberty (Howard Marsh). (5) A defect in the development of the spinal cord (Nunn). (6) Contractions of various muscles (Ellis). (7) Contractions of certain ligaments (Anderson). (8) Flat-foot (Golding Bird). Mr. Cotterill proceeded to demonstrate that, while some of the above causes might lead to stiffness in the joint and inability to dorsiflex the toe, that none of them satisfactorily accounted for the condition as above defined, in which the hallux lies at an altered angle to its metatarsal bone (1st symptom). His view of the case is that the condition which he has named "Hallux Rigidus" is brought about by a necessary combination of flat-foot and boot pressure. The various stages of hallux rigidus and the appropriate treatment for each were then discussed. The following is an abstract of a few of the chief propositions made by Mr. Cotterill:—1. Hallux rigidus proper is due to the invariable combination of flat-foot and boot pressure. 2. That while no amount of flat-foot alone will cause hallux rigidus (*c. f.*, as in the case of negroes, who, being frequently flat-footed, never suffer from it), a slight amount of flat-foot in combination with boot confinement is sufficient to bring it about. 3. That hallux rigidus, partly consisting as it does in a more or less complete limitation of dorsiflexion of the hallux to a right angle with its metatarsal bone (which is the normal range of dorsiflexion in the healthy adolescent), exists, *to a certain extent*, in almost *all* cases of flat-foot occurring in persons wearing ordinary European boots. 4. That flat-foot occurring in barefooted nations, or in those who wear sabots or other such boots as provide for ample dorsiflexion of the great toe, does not cause hallux rigidus. 5. That the connection between flat-foot and hallux rigidus has been frequently denied or overlooked owing to the imperfect means of testing flat-foot,—and that while an inspection of the foot, or of the footprint, are apt to mislead, the most reliable test is an inspection of the boots which have been worn. 6. That hallux rigidus is frequently one of the earliest manifestations of flat-foot in booted nations. 7. That while it is commonest in young boys, it occurs frequently in girls. (This has been denied.) 8. That in the early stages hallux rigidus may be cured by attention to the flat-foot, and by giving room for dorsiflexion of the hallux in the boot. In the later stages excision of the proximal end of the first phalanx is probably the only means of cure, though palliative treatment by fixation of the joint may give relief to pain in walking. (In the discussion which followed Mr. Macdonald Brown thought Mr. Cotterill had made out a good case for his "Hallux Rigidus.") (Edinburgh Medical Journal, Nov., p. 459.)

SUPRA-CONDYLOID OSTEOTOMY.—*Bone Exhibited.*—At the Glasgow Medico-Chirurgical Society, on March 9, 1888, Dr. William Macewen exhibited the lower third of a femur removed post mortem from the body of a man upon he had performed, ten years ago, his first supra-condyloid osteotomy for genu-valgum, and who, until a few months prior to his death from tubercular enteritis, had been regularly at work as an iron-moulder. This patient was exhibited, both before and after the operation, at the Medico-Chirurgical Society. The specimen showed fully developed lower third of femur, on which the seat of former operation was with difficulty determined. (Glasgow Medical Journal, April, p. 325.)

AFFECTIONS OF THE SKIN, ETC.

ACNE.—*Treatment.*—Unna, in the Monatshefte für praktische Dermatologie, 1888, advises the use of the following formulæ, to be applied *at night*:—Ung. zinc. benzoat., 86 parts; sulphur. præcip., 10 parts; terræ siliceæ, 4 parts.—Or, Ung. zinc. benzoat. 80 parts; resorcin. puriss., 10 parts: terræ siliceæ, 10 parts.—*For use during the day* either of the following lotions may be employed:—Resorcin., 2 to 5 parts; glycerin., 1 part; aq. flor. aurant., 20 parts; spiritus, 80 parts.—Or, Hydrarg. bichlor. corros., $\frac{1}{20}$ to $\frac{1}{5}$ part; glycerin., 1 part; aq. flor. aurant., 20 parts; spiritus, 80 parts. (Medical News, Feb. 25, p. 209.)

Acne Rosacea.—Treatment.—M. Besnier, as reported by M. Brocq in the Journal of Cutaneous Diseases, pursues the following treatment in cases of acne rosacea:—(1) Entire prohibition of alcohol and wine, and (M. Vidal would add) of coffee, of spiced or salted meats, shellfish, crustacea—in fact, of all aliment which, being difficult of digestion, is liable to cause congestion of the face. (2) The use of purgatives, diuretics, and sudorifics, to act on the intestinal, renal and cutaneous functions, and thus to facilitate the elimination of the hurtful products which have been formed within the organism. (3) The avoidance of external irritants, such as cold, high winds, or hot fires, which might congest the face. (4) The use of topical irritants at the points affected. In mild cases it suffices to apply on going to bed a mixture composed of equal parts of soap and precipitated sulphur. This is to be removed in the morning, and the application is to be continued every night as long as the patient can bear it. When the inflammatory action becomes too active, an emollient ointment or cataplasms of potato flour may be used, and the treatment recommenced. When the rosacea is but very slight, a thin coating of the following preparation may be applied to the face at night:—Precipitated sulphur, 50 grammes; glycerine, 30 grammes; camphorated alcohol, 80 grammes.

Rose-water may be added if desirable. Vidal employs a sulphur lotion, composed of camphorated alcohol and precipitated sulphur, āā 30 grammes; distilled water, 250 grammes; to be applied to the affected parts in the evening, and to be removed with very hot water in the morning. An excellent modification of this method consists in using frictions of hot water and green soap in the evening before making the application, and using them in the morning to remove it. It is also advisable to use zinc ointment upon the parts during the day. (5) Finally, Besnier sometimes prescribes internal medicines for the relief of the vascular dilatation of the face. He uses chiefly hamemalis and ergotine for this purpose. (Practitioner, Feb., p. 133.)

Burns.—*Treatment.*—Von Mosetig-Moorhof (Wiener Med Presse) complains that hitherto the principles of antisepsis have been for the most part very slightly considered in the treatment of burns. He recommends the use of iodoform, and refers to the analgesic operation of that drug. The patients become more quiet a few minutes after the application, and can, after a quarter of an hour, bear moving with comparative ease. With some precaution, there is no danger of poisoning. He opens the blisters, cleanses the surface carefully with wadding dipped in a half-per-cent. solution of salt, and then covers the burned parts with several layers of iodoform gauze, first sprinkling the very badly injured places with iodoform powder. This he covers with a large piece of gutta-percha tissue, then spreads absorbent cotton over the entire surface, and applies a bandage. This dressing remains as long as cleanliness or fever does not render a change necessary, usually from one to two weeks. In case the dressing is penetrated to a great extent by the discharge, the outer layers of the dressing may alone be changed, leaving the inner untouched. Complete occlusion is impracticable on the face, so here a five-per-cent. ointment of iodoform and vaseline, covered with a mask of gutta-percha tissue, may be applied, and daily renewed. (New York Med. Journal, Oct. 8, p. 419.)

Cocaine in Skin Diseases.—Lustgarten (Wiener med. Wochenschrift), states that where the epidermis is intact cocaine applied to the skin is not absorbed, but where the horny layer is thin or absent it acts. A two per cent. solution used several times daily allays the itching in acute and subacute eczema, being especially valuable in eczema of the anus and genital regions of both sexes. In the form of ointment he employs oleate of cocaine 6 grains to 15 grains; lanolin 4½ drachms; olive oil ½ drachm; followed by the use of a dusting powder. In pruritus ani suppositories may be made containing ¾ of a grain of oleate of cocaine. The author cautions against the toxic effects of cocaine, three cases of this kind having been encountered when only ¾ of a grain had been used. (American Journal, Jan., p. 96.)

Colourless Tincture of Iodine.—Medical men frequently order, for external application, tincture of iodine decolorised by ammonia, which was first introduced by Sir J. Y. Simpson. It is manifest that the clear colourless solution resulting does not contain free iodine, but considerable difference of opinion has prevailed as to the exact nature of the compound formed. Mr. J. R. Hill has recently published, in the Pharmaceutical Journal, some investigations which led him to the opinion that first iodide and hypiodite of ammonia are formed. This hypiodite reacts with the alcohol to form iodoform and formiate of ammonium, and the iodoform thus produced reacts with free ammonia to form iodide of ammonia. Ultimately the tincture contains iodide and formiate of ammonia, free ammonia and spirit. The decolorising process is found to be expedited by warmth as well as light. (Dr. Leech in Med. Chronicle, Feb., p. 389.)

Dermatitis Exfoliativa Neonatorum.—The following description by Dr. G. T. Elliot, of New York, is founded upon a study of 297 cases of this disease, observed by Ritter in the Foundling Hospital at Prague. In the course of his communication Dr. Elliot narrates two cases occurring in his own practice, and discusses fully the pathology and differential diagnosis of the disease:—The appearance of the disease occurred rarely before the end of the first, but more especially between the second and the fifth week of life. The outbreaks varied greatly in the acuteness and in the intensity of the symptoms, and in some cases were preceded by a dry, scaly condition of the skin, which had persisted after the physiological desquamation of the epidermis had taken place—Ritter's prodromal stage. The inception of the process was shown in the sudden development of a diffuse redness, more usually upon the lower half of the face about the mouth, but this could also occur upon any other portion of the body or might be universal from the very first. From its starting-point, this hyperæmia spread rapidly and continuously or appeared in patches here and there, finally, however, becoming universal in a very short space of time or in a few days. As a rule, the extremities were the last to be affected. The mucous membranes of the mouth and nose participated sometimes in the process, and fissures formed at the corners of the former; the conjunctivæ were usually affected. The colour of the skin varied from a light to a dark purple red. Synchronously with the extension of the hyperæmia, exfoliation of the epidermis began upon the surface first affected. Great variations were presented by this stage. The exfoliation might occur without any evidences of exudation, the epidermis being slightly thickened, wrinkled, dry, and fissured into pieces of all sizes, the edges of which were loosened and which were easily removed by any slight mechanical action, the underlying rete being already covered by a thin

layer of new epidermis. Or, upon the red or scarcely reddened surface of the trunk and face an outbreak of small vesicles like those of miliaria crystallina appeared, the exfoliation of the epidermis occurring afterward in the usual way; or again, the horny layer over the intensely red surface was lifted up by fluid accumulation into large, irregularly shaped, flaccid bullæ. After the exfoliation had taken place regeneration followed, at times very rapidly, the extremities requiring somewhat longer to regain their normal colour, but the skin remained for some time scaly and irritable. In those cases in which there was no exudation, a longer time was necessary for the casting off and regeneration of the epidermis, but usually the disease ran its course in from seven to ten days. Relapses were occasionally observed ten to twelve days after the first attack, but were always mild. In typical cases, the process was unaccompanied by any fever or systemic disturbance, unless some internal complication existed; the general functions were normal, and the weight of the baby remained stationary or even increased. Fatal cases resulted either from the intensity of the attack, or from some intercurrent affection, though more usually from some of the sequelæ, furunculosis, etc., which were seldom absent, with consecutive sepsis or gangrene. Ritter regarded the affection as a form of pyæmic infection. The fatality of dermatitis exfoliativa neonatorum is worthy of attention. Of the five cases which I have seen, two recovered, two died, and the fate of one is uncertain. The two deaths cannot be said to have been due directly to the disease, yet I am inclined to regard the gastroenteritis in the one as a sequela, since it developed immediately upon the subsidence of the cutaneous symptoms, the appearance of the one coinciding with the disappearance of the other. The immediate cause of death in the case seen in 1886 was unquestionably the hemorrhage from the iris, certainly an accidental and unique one. But this, however, must be regarded as depending directly upon the marasmus, which again was, in all probability, dependent upon the dermatitis exfoliativa. So that it is perfectly just to consider this latter as the indirect or contributive cause of death. (Dr. G. T. Elliot, American Journal of Med. Science, Jan., p. 2.)

Dermatitis Herpetiformis.—At the American Dermatological Association, on Aug. 31, 1887, Dr. L. A. Duhring, of Philadelphia, read a paper on the Diagnosis of Dermatitis Herpetiformis. He had been led to believe, from the perusal of various reports of cases, that this affection was not thoroughly understood. Its chief characteristic is the multiformity of the lesions manifested in the natural evolution of the disease. Blebs, vesicles, and pustules, may appear together or separately. Mixed eruptions are the most common, vesicles predominating. In one attack or another only one kind of lesions may be present. The disease

presents clearly defined characters in distinct elementary lesions, and certain distinctive abortive lesions. Secondary forms of lesions also exist. Pigmentation of a dirty yellow or brownish hue, and variegated, is usually a marked feature in chronic cases. In no other affection are such varied combinations of lesions met with as in dermatitis herpetiformis. Erythema and vesicles, or vesicles and blebs, or blebs and pustules, frequently exist side by side in close proximity with more or less pigmentation, excoriation, and secondary changes. Itching is usually a most distressing symptom, and is most severe in the vesicular variety. In the purulent form, subjective symptoms may be wanting. The disease is extremely chronic, extending over a number of years. In two cases, under the author's observation, the duration had been thirteen and eleven years respectively, and the disease was still active with no prospect of cure. Some cases of dermatitis herpetiformis closely resemble cases of erythema multiforme, but the lesions of the former disease are less sharply defined, and the course of the two affections is different, erythema multiforme being an acute disease of short duration. The disease occasionally resembles herpes iris, but the chronicity of the affection would exclude herpes iris. The lesions are also more virulent and accompanied with a more profound degree of cutaneous disturbance. Herpes iris is a benign affection, running an acute course, and terminating in recovery, although subject to relapses. When the bullous varieties exist alone they may resemble pemphigus vulgaris, the combination with other lesions will, however, prevent any confusion in the diagnosis. (Medical News, Oct. 8, p. 432.)

Erythema Multiforme.—Dr. Polotebnoff, of St. Petersburgh, has made an exhaustive research into the nature and relationships of erythema multiforme, and brings forward many arguments in favour of the idea that it should be regarded as one of the series of infective diseases. As regards pyrexia in erythema he concludes, from personal observation, that neither the height nor the duration of high temperature bear any relation to the morphology, or to the degree of extension of the erythema over the body. "The erythemata do not constitute an independent group of infective diseases. On the contrary, they manifest but one of the slightest and most innocent symptoms of the various typical and abortive forms of such diseases. There is, therefore, no ground for speaking of a prodromal stage of erythema, of complication, &c., and still less can we speak of 'benign and malignant' erythemata. The prodromal symptoms, complications, &c., in question,—pleurisy, endocarditis, catarrh, &c., as well as the degree of malignancy,—are only features of the infective disease of which the erythema is one of the symptoms." (Dr. Jamieson's Report in Edinburgh Journal, March, p. 857.)

Favus.—At the Glasgow Medico-Chirurgical Society, on the 9th March, 1888, Dr. W. G. Dun and Dr. C. Fred. Pollock exhibited microscopical preparations of Favus, "Achorion Schönleinii," and also mice affected with the disease.—Dr. M'Call Anderson said it was one of his difficulties, in the cure of favus, to exclude air. His friend, Dr. Grainger Stewart, informed him that the cure in these cases was quite temporary, and the disease returned when the treatment was stopped. You will not get favus in healthy subjects. It will not flourish except the soil is deteriorated. He might say that some years ago he published a paper on the non-identity of the various fungi seen upon the skin. Favus in the mouse, instead of being a rare, is an exceedingly common disease. He had seen many cases almost always affected in the one way, generally always in the ears, and the next part is the back close to the tail. It is a very serious disease in mice: it sometimes kills them. He had also seen favus in cats and dogs, and in a great variety of animals. The way it is conveyed to the human family in a large number of cases is, first, from the mouse to the cat. The cats play with the mice before killing them; then the children play with the cat, and so contract the disease. The same thing would take place if the children play with the dog if it had the disease. It is curious that favus is such a common disease in Scotland and rare in London and America; but it is pretty common in France. The cure takes a long time, and his rule in the Western Infirmary is not to take in more than one or two at a time. He sometimes applied epilation plaster; but otherwise the epilation sticks are used. A person whose head is the seat of favus has an exceedingly mousy odour. (Glasgow Med. Jour., April, p. 328.)

Ichthyol and Resorcin in Skin Diseases.—Jackson contributes to the Journal of Cutaneous and Genito-Urinary Diseases, his experience in the use of these two remedies. Ichthyol (ammonia-sulphate) was employed and its effects followed up in 3 cases of rosacea, 8 cases of eczema, 6 cases of acne, 1 case of sycosis, and 3 cases of ulcers. In rosacea, in two cases the effect was negative; in the third case the disease was aggravated. Of the eczema cases, 4 were made worse, 2 were uninfluenced, 1 greatly benefited, and one temporarily improved. (In these last cases, the ichthyol was prescribed in Lassar's paste.) Of the acne patients, 1 was cured (bromide of arsenic was given by the mouth), 2 made worse, 1 temporarily benefited, 1 improved, and in 1 no effect. In the case of sycosis, the disease was aggravated, and the same may be said in regard to the three cases of ulcers in which it was used. In the above cases the remedy was prescribed externally, in ointment, with vaselin or lard, in strength varying from three to thirty per cent.—the weaker strength being used in the eczema cases. In some cases, also,

the remedy was prescribed by the mouth in addition to its use externally. The author passes the following judgment: Ichthyol is an unreliable preparation when used alone; in some cases it is of apparent benefit when exhibited as an adjuvant, but it is not so good as many other old and well-approved remedies. In the use of resorcin the writer was able to follow out its effects in 6 cases of eczema, 3 of epithelioma, 3 of scrofuloderma, in 1 of lupus erythematosus, 1 of lupus vulgaris, and 1 of psoriasis. In eczema it was prescribed in ointment and glycerine, two to twelve per cent. strength; 1 case was cured, 2 improved, and 3 aggravated. In epithelioma, in five to fifty per cent. ointment, all (3) the cases were improved, 2 healing completely, although later one of these showed a return at the edge of the patch. In the 3 cases of scrofuloderma, in ten to twenty per cent. strength, improvement was noted, in one a cure taking place; in these cases arsenic and iron were taken by the mouth. In the case of lupus erythematosus, under the use of a twenty per cent. resorcin ointment, the disease rapidly improved; phosphorus was given internally. In the case of lupus vulgaris (non-ulcerating), constant improvement was noted. In the patient with psoriasis, the first effect was favourable, but later the remedy exerted no influence. The writer summarizes his experience with resorcin as follows: Resorcin is an irritating substance for use in eczema, though at times it may prove very efficient in chronic cases where active stimulation is indicated. It exerts a powerful absorptive effect on new cell infiltrations. It is a useful addition to our list of remedies for the treatment of epitheliomatous lesions where surgical procedures are contraindicated from any cause. (International Journal Med. Science, Oct., p. 597.)

Ingrowing Toe-Nail.—*Radical Cure of.*—Dr. B. E. Cotting recently described before an American medical society a method which he has used for forty years, and which he has never known to fail. Other members of the society bore testimony to its success. "Remove with the knife the diseased fleshy parts, *together with a large and thick slice* of the healthy and adjoining side of the toe. Let the cut begin, or go well back" (opposite the root of the nail), "and let it be guided by the edge of the nail, which should be exposed, but need not, nor its matrix, be involved or injured thereby." Bleeding may be prevented by an assistant compressing the lateral blood-vessels between his thumb and fingers, or by using a small elastic tourniquet. Perchloride of iron, or another styptic may be applied before the dressings, but it is usually enough to apply a dry dressing very firmly before the pressure is removed. Some of the surgeons have operated by a method of transfixion from above, in order more easily to avoid cutting the nail, but that amount of care is unnecessary, for it does not seem to matter

much though the edge of the nail is sheared off during the operation. "This operation, one of the simplest ever devised for this affection, differs from all the others in its fundamental principle and purpose—namely, the producing of a radical cure by cicatricial contraction, and that by means of a wound of sufficiently large extent, in healthy as well as diseased parts. For, as the wound heals, the remnants of the lateral fleshy nail furrow, if any remain, together with the soft parts adjoining, are drawn in by contraction, and in this manner, are kept away by the edge of the nail. The patient lies in bed for a few days, or immediately sits up, or hobbles about as he pleases, even going to his work at once, if necessary. From the moment of the operation there remains a clean cut wound, to heal as other wounds of like dimensions, with less pain or annoyance in it than previously in the disease." (Mr. Maylard's Abstract in the Glasgow Med. Journal, April, p. 361.)

Iodoform.—*To Mask its Disagreeable Odour.*—From a series of comparative trials I beg to offer the following prescription as securing the end in view:—℞. Iodoform, gr. 60; ol. amygdalæ, ʒijss; ol. theobrom., ʒijss; ol. myristicæ, ♏xx; moschi, gr. iij; coumarin., gr. vj; sp. tenuior., ʒi. The essential ingredient here is musk. To some people, however, the smell of musk is also disagreeable, and the other substances are added with the view of leaving a pleasant odour, neither of musk nor iodoform. If the iodoform is desired for dusting purposes, as in soft chancres or burns, the combination of 1 grain of musk to 10 or 15 grains of iodoform is satisfactory. These prescriptions have been made up by leading pharmacists here, and they bear willing testimony to the facts mentioned. (Professor Charteris, British Med. Journal, Jan. 21, p. 132.)

Leukæmia Cutis.—Hochsinger and Schiff report a case of this very rare form of cutaneous disease, the same being only the third on record. The two other cases were reported by Biesiadecki and by Kaposi. The patient was a boy eight months old, with marked leukæmia (general swelling of the lymphatics, tumour of the spleen, enlargement of the liver, and increase of the white blood-corpuscles), and whose entire skin, especially of the face and head, was studded with numerous pin-head to hazel-nut sized infiltrations of, for the most part, a nodular and rounded form, sometimes umbilicated. They were of a yellowish and brownish-reddish colour, were firm, and were movable with the skin over the loose connective tissue. Microscropic examination showed them to be composed entirely of lymphoid cell elements in the skin identical with the lymph cells of the blood. Here and there existed a scanty, finely reticular stroma. The authors favour the use of "leukæmia cutis" to express the con-

dition, rather than the "lymphodermia perniciosa," proposed by Kaposi. The disease has no relation to mycosis fungoides—the "lymphadenie cutanée" of French writers. (American Journal, March, p. 309.)

Lichen Ruber.—*Pathology.*—Since 1880 Köbner has treated fifty-two cases of this disease. Of this number only two were of the serious type described by Hebra. The author recognises, as do most writers, two varieties of the disease—lichen ruber acuminatus, and lichen ruber planus—and in his experience the latter type is by far the more frequent. The writer finds, from numerous examinations, that this disease has primarily its beginning in dilatation of the bloodvessels and perivascular cell-infiltration in the upper part of the corium in the papillæ, and along with this is noticed rapid growth of the rete; but involvement of the hair follicles or sweat-glands, which is referred to by most writers, was found to be inconstant and incidental. Careful examination for bacilli gave negative results. The author's cases tended to prove the neurotic origin of the disease. Arsenic was the remedy which gave good results. Unna's ointment was found valueless. (International Journal of Med. Sciences, Oct., p. 599.)

Lupus.—Prof. Jonathan Hutchinson's Harveian Lectures. (See also Articles 65, 66, 67, and 68, pages 337–348 of this vol.)

Lupus.—Common Lupus the Head of a Family, and not a Solitary Disease.—Definition of Common Lupus.—We have described common lupus as a slow process of cell growth in the true skin with infection by continuity, by contiguity, and in some instances to distant parts through the vascular channels. We have said that it is to be recognised by these qualities as regards its mode of advance, and above all by the visible presence of a new material, like apple-jelly, which is easily appreciated by the unassisted eye, and which is absolutely pathognomonic. I wish to make the distinct claims for all affections of the skin, which show these features that they belong to the lupus family, and in so doing, I by no means insist upon the last named. There are a great many cases of common lupus in which the apple-jelly cannot be seen and many more cognate affections in which it is never visibly present. In order, however, that we may increase the means at our disposal for deciding as to what should and what should not be admitted to be either true lupus or nearly cognate with it, it may be well to mention a few other common features of lupus-disease. None of them approach in importance those already stated, but some are still of considerable value. (Mr. Hutchinson, British Med. Journal, Jan. 7, p. 8.)

Lupus of the Buttock.—Its Peculiarities.—As a good example of the influence of local conditions in modifying the disease,

I may mention that lupus assumes somewhat peculiar features when it occurs on the buttock. Its cause in this position is frequently the irritation of riding. I well remember, when a student at St. Bartholomew's, the case of a young man (I think a groom) who had a patch the size of the palm of a hand on one buttock. Mr. Stanley amused himself by making his friends write their diagnosis of this sore on a paper which hung at the head of the man's bed, and I think there were at least half a dozen different opinions there recorded. For some it was simply a "saddle sore," others regarded it as syphilis, others as impetigo, and, lastly, some, who I have no doubt were quite correct, called it lupus. I have seen several such sores since then, and they are all of the same character. Their peculiarities are—extremely slow advance at the margin, and a very thick, almost brawny, cicatrix in the centre. These peculiarities are no doubt due to peculiar conditions as regards pressure and friction to which these sores are exposed. An example of this form of lupus has been admirably studied by Dr. Sangster, who has recorded his results in the twenty-ninth volume of the Pathological Transactions. His patient was an engine fitter, aged 24, but as the disease had begun when he was 10 years old, it had, in its origin at least, nothing to do with his occupation. The patient was in excellent health, but a paternal aunt was said to have died of consumption. Although the disease had been fourteen years in progress, the patch did not measure more than four inches across. It was hard and cicatricial in the centre, like "bacon rind," but had a somewhat inflamed and crusted edge. (Ibid., p. 9.)

Lupus Erythematosus.—Its Relation to Chilblain.—The tendency on the part of the tissues to inflame and become irritable, under the intermittent influence of cold and damp, which constitutes the chilblain proclivity, is so marked in many cases of lupus, that this disease might almost be regarded as being a modified chilblain. This statement concerns the erythematous form more frequently than it does the common lupus, but it is not without its importance as regards the latter. (Ibid., p. 10.)

Lupus.—Its Relation to "Struma," "Scrofula," and "Tuberculosis."—Those who hold with the greatest firmness the modern doctrine that a bacillus is the one and the only cause of true tuberculosis yet admit that peculiarities in the state of health of the recipient are of very great importance in favouring the development of the parasite. For them tuberculosis is a disease of infection from without, and can never be self-produced; but still only those of certain idiosyncrasy or diathesis are capable of readily receiving the contagion. We have then two things—contagion and proclivity. It follows, I think, that it is quite possible that the state of system which constitutes proclivity may in itself and

without tuberculous infection originate some forms of disease. Nothing is more probable than that persons vulnerable in the direction of easily affording a nidus for the tubercle bacillus may also be liable to peculiar forms of common inflammation. That such is the case I would submit we know well by experience. In such patients wounds, bruises, and chilled parts repair badly and are very apt to inflame. If exposed to cold, chronic catarrhs or states of local inflammation may readily follow. Thus ophthalmic surgeons recognise a scrofulous ophthalmia which they do not regard as tuberculous, but which occurs in patients who have tuberculous susceptibilities. I would venture to suggest that the terms struma and scrofula are very suitable for the designation of all such specialised types of common inflammation as we encounter in those who would easily become tuberculous if exposed to contagion, but who have not as yet had the bacillus implanted. Whatever results from the implantation of the bacillus we may name tuberculosis, whatever results from the constitutional state alone we may denominate scrofula. (Ibid., p. 10.)

Lupus.—Circumstances determining its Varieties.—It may perhaps help to simplify our conceptions on the subject if we make bold to deny that there is any such pathological entity as lupus, and to assert that it is simply a name which for convenience sake we give to certain types of the inflammatory process, endlessly varying in detail, but having certain features in common. With the preliminary statement that all varieties of lupus when once well established keep to their type, it may next be well that I should state categorically the circumstances under which these varieties take their rise. 1. *The Kind of Local Irritation.*—Whether, for instance, a sting or a bite, a wound, a sunblain, a chilblain, or a dissection prick. 2. *The Peculiarities of the Part to which the Irritation is applied.*—Thus the tip of the nose, its alæ, its bridge, the clefts of the toes, the scalp, the various mucous membranes, &c., each have their one more or less peculiar form of lupus. 3. *The Vital Endowments of the Individual.*—Whether of vigorous circulation or easily liable to chill, whether thin or of abundant cellular tissue, whether liable to chilblains or otherwise. 4. *The Age of the Patient.*—Thus the younger the patient the more certain it is that the lupus will be of the vulgaris type, and the more probable that it will become multiple. Lupus erythematosus scarcely ever begins before the disturbances in circulation incident to puberty have occurred. 5. *The Sex of the Patient.*—The female sex is more liable than the male to lupus vulgaris, but in lupus erythematosus the difference in proportions is very marked indeed. The influence of menstruation in disturbing the circulation is probably here at work. 6. *The Inherited Tendencies of the Patient.*—There can be little doubt

that those who inherit a state of constitution liable to the easy growth of the tubercle bacillus are liable, also, to all the forms of lupus. They are just as prone, perhaps more so, to be attacked by erythematous as by common lupus. The mucous membranes are, perhaps, seldom attacked, excepting in those who are tuberculous. An inheritance of a tendency to cancer gives, perhaps, a tendency to common lupus. (Ibid, Jan. 14, p. 59.)

Lupus, Cancer, and Syphilis.—The general definition of lupus which I have given, as a *serpiginous, infective, scar-leaving inflammation of skin and mucous membranes*, will, I believe, include all varieties of the disease, and, with two exceptions, nothing else. Nothing is lupus which does not spread slowly by infection at its edge, and which does not leave the affected part more or less disorganised; and every form of inflammation of which these are necessary and invariable qualities is lupus, unless it be either syphilis or cancer. I need not trouble you with much as to the distinctions between cancer and lupus, because they are usually very obvious. It is only by exception that malignant action shows any tendency to permit of cicatrisation in the parts which it has disorganised. A few rare forms of superficial rodent ulcer are the only conditions in which malignant action produces appearances which clash with my definition of lupus. It is, however, wholly different in the case of syphilis. Probably there is not a single variety of the lupus type of inflammation which may not be simulated, and that too with the utmost closeness, by syphilis. The diagnosis depends upon certain minor features of peculiarity, upon the history of the case, and upon the effects of specific treatment. Thus, then, the truth seems to be that the syphilitic poison can produce lupus inflammations. In doing this, however, it stamps them all with its own nature, and we are concerned, not with the true disease, but with an imitation of it. I cannot too strongly insist that the imitation is most accurate, and the diagnosis often most difficult. So far as the definition is concerned, I should be prepared, whenever a syphilitic skin disease spreads at its edge and leaves a scar where it has been, to say of such a disease, "it is a syphilitic lupus." It may be an eczema-lupus, a rupia-lupus, a lupus vulgaris, or lupus erythematosus. (Ibid, p. 59.)

[See also Art. 65 on "The Clinical Characters of Common Lupus," at page 337 of this volume of the *Retrospect.*]

Lupus.—Struma-Lupus.—Under the name struma-lupus we may place cases in which the conditions of cutaneous struma and lupus are mixed. By cutaneous struma I mean an affection which begins usually immediately beneath the skin and affects the latter secondarily. The skin becomes livid, and ulcerates, and ragged sores with undermined borders are formed. This state of things occurs usually without any combination of true

lupus. Sometimes, however, we meet with the apple-jelly growth in one part and a characteristic lupus condition, whilst at another subcutaneous abscesses are formed. I am attending at present a case of this mixed kind. The patient is a woman aged 40, with a somewhat tuberculous history. On her right cheek and side of neck are large patches of lupus, whilst lower down in the neck and over the front of the sternum a succession of abscesses have occurred and the skin has ulcerated in the manner described. These cases are not common, and we know that in most cases of lupus there is no tendency to abscesses and but little to gland disease. My notes would, I think, supply almost a dozen cases in which this complication was present, and to them the term struma-lupus seems applicable. In them the lupus patches always tend to inflame and ulcerate early, and there is, I think, almost always a strong history of strumous antecedents. As the disease is a mixed one, so must the treatment be. (Ibid, p. 61.)

Lupus.—Necrogenic Lupus.—The pricks and scratches which those who have to do with dead bodies in post-mortem examinations or in dissections are liable to, not infrequently end in a kind of lupus. I believe that Dr. Wilks was one of the first to call attention to this disease, which he described under the name of necrogenic warts. Excepting that nothing of the nature of apple-jelly growth is ever seen, the disease in all respects conforms to the type of lupus. A thickened mass of granulation tissue developed into papillary masses is produced which may heal or ulcerate according to the exposure to cold, season of year, and state of health. Sometimes in the early stages the lymphatic glands may be irritated, but not in the later. The disease is to be cured, as we cure lupus, by liberal scraping or by cauterisation, and it has the same tendency which lupus has, to end, if long neglected, in epithelioma. It spreads at its edge with greater or less rapidity, just as other forms of lupus do. (Ibid, p. 61.)

Lupus Mutilans.—The term lupus mutilans might seem appropriate to cases in which the nose has been extensively destroyed and the patient's features much damaged. It has, however, I believe, been restricted to the rare examples of mutilation of the hand which we now and then witness, and of which I now show you a good portrait. I have only seen four or five good examples of lupus mutilans. For its production it is necessary that lupus should attack the hand of a young child, and this is not common. When it happens and, the disease being extensive, the fingers are surrounded and universally involved, a sort of arrest of growth takes place, and the most extraordinary deformity results. The fingers may all be lost, or may be dwarfed until only their tips remain. I have never watched such a case from the beginning, nor probably will any good surgeon ever have the opportunity.

I am obliged, therefore, to take the histories given by the patients' friends, and, if they may be trusted, these deformities are sometimes produced without any exfoliation of bone. That lupus mutilans is really lupus is proved by the usual coincidence of patches of ordinary lupus on other parts of the patient's limbs. In a case which was recently shown to me by my friend Mr. Sibley, a young lady had one hand almost in the condition shown in the sketch, and she had also common lupus on the face and lupus of the soft palate. Lupus mutilans is a result of lupus under peculiar conditions, and by no means a variety of it. (Ibid, p. 62.)

Lupus of Mucous Membranes.—The subject of lupus of mucous membranes is a large and very important topic, but I must deal with it very briefly. It is almost always in association with lupus vulgaris, and not with erythematosus, that we find the mucous membranes affected. Almost always the skin is first attacked, but this is not invariable. I have seen lupus begin on the gums or the palate or in the cheek several times without any like disease of skin. We also see cases occasionally in which disease in the lachrymal sac appears to be the beginning of lupus of the cheek. When lupus affects mucous structures there is usually a very definite history of tuberculous tendencies in the family. It would be impossible to identify the changes which attend it as being lupus, did we not constantly find it in association with lupus of the skin. The mucous membrane becomes thickened, papillary, and ulcerated. There is never anything to be found like the apple-jelly growth. In the mouth the gums may be destroyed and the teeth fangs exposed; the soft palate may also be destroyed and the disease may spread to the larynx. The changes may usually be distinguished from syphilis by noting that the bones are never involved, and that no perforations of the palate occur. It is always a creeping, superficial process. How far the disease may pass down the throat I do not know, nor whether it ever invades the stomach. As a suggestion in that direction, I may remark that several of my lupus patients have died of hæmatemesis. The conjunctiva is sometimes primarily affected. I have several times diagnosed lupus of the mucous membrane just within the anus, but never, perhaps, under conditions which placed the diagnosis beyond dispute. A syphilitic simulation of it is not uncommon in this part, and often leads to stricture. The exemption of the genitals from attacks of lupus is a very remarkable and well established circumstance. I have no doubt that it illustrates the influence of temperature in causing lupus. The further the part from the centres of circulation, and the more frequent its risk of being chilled, the greater is the danger that it may be attacked by lupus. Warmth is inimical to the disease. On the female genitals I have scarcely ever seen well marked lupus, and very few

have been the instances of it on the penis. The glans penis is not infrequently attacked in tertiary syphilis by a disease which spreads just like lupus. Although, as I have said, lupus erythematosus very seldom affects mucous membranes, yet it does so occasionally. (Ibid, p. 62.)

Lupus of the Septum Nasi.—Lupus of the septum nasi is only a form of lupus of mucous membranes made peculiar by the part affected. It is, however, a rather special affection, and as it is almost constantly mistaken for syphilis, it is desirable to say a few words about it. It usually begins just within the nostril, and a small ulcer forms, which soon perforates the septum. The edge of the ulcer may heal, leaving only a comparatively small hole, or it may extend up to the edge of the vomer. Here, again, we observe the distinction from syphilis, that lupus never produces disease of the bone. These perforating lupus ulcers of the septum may occur without any skin-lupus whatever, but the proof that they are of the lupus nature is found in the frequency with which they occur in association with it. I have shown you a portrait of unusually extensive destruction of the lips and face by lupus, and remarked in connection with it that the young lady was one of the very few cases which I have known in which a lupus patient died of phthisis. Now a sister of this young lady, who had herself no skin-lupus, became the subject of a chronic ulcer on the septum nasi, which was only saved from perforation by free cauterisation. In a lecture devoted to this special subject, I endeavoured to prove that perforating ulcers of the septum, when occurring as the sole lesion, are by no means necessarily syphilitic, being often examples of lupus. (Ibid, p. 62.)

Lupus.—Eczema-Lupus.—For clinical convenience I give the name of eczema-lupus to cases which look like eczema, but which really are lupus. In some cases an eczematous process seems to have preceded that of lupus, but in others the lupus disease appears to have produced eczematous inflammation. More or less of eczematous or impetiginous inflammation around patches of lupus is not at all uncommon, but it is not these cases which I would claim for the present category. The name proposed should be restricted to cases which in all parts, and through their whole course, have the features of eczema but the tendencies of lupus. This eczematous development may occur alike in common lupus and in the erythematous form, and it may be either dry or moist. The very prolonged duration of the patches, their incurability, their slow extension by infection at their borders, and, above all, the fact that when cured they leave scars, sufficiently prove them to be lupus. Yet it is part of my assertion that the two diseases conjoined in the name are really mixed in the hybrid malady. Now and then the patient has patches of eczema on other parts which do not assume lupus characters. (Ibid, p. 62.)

Lupus.—Acne-Lupus.—I give the name acne-lupus to a disease which was, I believe, first described by the late Dr. Tilbury Fox under that of lupus follicularis disseminatus. I am sorry to propose a change from that used by a dermatologist so distinguished, but I believe that mine expresses more with greater brevity, and will be more easily remembered. It is obvious that they imply the same thing. The disease is a combination of acne with lupus, or rather, perhaps, it is lupus attacking acne spots. I have seen but very few good examples of it, but it is a very definite variety of the disease. In the case of a young man named S., whose sister's case I have already detailed to you, both cheeks showed acne spots. On the left cheek, however, many of the spots had enlarged, and were obviously of the apple-jelly structure. There could be not the slightest doubt that they were lupus, and equally little that they were arranged like acne, and occurred in connection with sebaceous follicles. This young man had also lupus of his alæ nasi and of his palate. As already recorded, two of his sisters had somewhat similar affections, and the family was decidedly strumous. Acne-lupus is a form of common lupus, and not of the erythematous division. It is, so far as I have seen, never symmetrical, and the apple-jelly is very characteristic. It is of interest to note that it never attacks acne spots on the back, but occurs, I believe, on the face only, illustrating what we have had so frequently to ask attention to, the influence of cold and exposure as causes of lupus. I show you portraits taken from another case, but in it the conditions were not so definite as in the lad S. (Ibid, Jan. 21, p. 113.)

Lupus Lymphaticus.—Briefly, the characters of this malady are the following: It almost always begins in childhood. I have only once known it originate in an adult. A number of little persistent vesicles arranged in a confluent group are its first stage. By an infective process, which travels probably along the lymphatic walls, it very slowly advances. The original patch grows larger, and numerous satellites are developed near to it. The patches sometimes inflame, and become covered with scab, and now and then attacks of erysipelas occur. I have several times known the patch spread until it was as large as an outspread hand, but I have never as yet seen the patches reproduced on different parts of the body. Scars are left when the process comes to an end, but I have not as yet, excepting under the influence of treatment, witnessed anything very definite in the way of spontaneous cure. The chin, the nose, the shoulder, and the side of the trunk are the parts on which it has been observed. In the case of Dr. Tilbury Fox, and that of Mr. Bryant, conditions precisely the same as those which I have now described occurred in connection with congenital nævi; but in not one of my own cases had anything of the nature of nævus preceded

the disease. The latter, indeed, did not begin in any of them until the child was several years old. In one case, which was shown me by Mrs. Garrett Anderson, M.D., the patient was a lady of about 50, and the disease had not been present more than six or eight years. The facts, which seem to me to require that this disease should be placed in the lupus family, are the following: It begins usually in the young; it spreads by infection of continuity and contiguity; it spreads very slowly, but may in the course of time involve large areas; it leaves scars, and is liable to erysipelas. Some sections of skin, which were cut for me by my son, showed such a large amount of cell growth in the corium that they were indistinguishable from lupus. There seems to me nothing whatever improbable in the supposition that lupus should, in some instances, infect the lymphatic system chiefly, just as it does, we well know in others, the blood-vessels or the sebaceous glands. I do not believe that in these cases the process is confined to the lymphatic vessels, but simply that they take the chief share. I may ask attention to the fact that the cure of the disease is to be effected by precisely the same remedies as those which we should employ against common lupus. (Ibid, p. 114.)

Lupus.—Rupia-Lupus of Children.—I now have to invite your attention to a very extraordinary and important case which throws, if I mistake not, a flood of light upon the life-history of lupus in general. This poor boy is literally covered with large patches of what would formerly have been called lupus exfoliativus. On his cheeks, forehead, limbs, and penis these patches occur. Some of them are as large as the palm of the hand, many of them show the apple-jelly growth in great perfection, and all of them are still spreading more or less at their edges. The trunk is the only part which is exempt. The case would be of interest were it only as an example of extreme multiplicity and of unusual size of patches. Its chief interest is, however, not in the present condition, but in the history of its origin, and of the mode of progress. The boy, who is four years and a half old, is, as you will see directly, apparently in excellent health. His parents are in good health; there is no history of scrofula, and there is not the slightest reason to suspect the inheritance of syphilis. The disease began by a patch on his forehead, which inflamed and ulcerated. Then in the course of a few months others developed on various parts of the limbs and face. All of these inflamed and became covered with thick scabs. In some instances the scab was heaped up in a conical form, almost amounting to rupia prominens. These conditions you will see well shown in the large portraits which I exhibit, and which represent the disease as it was at that stage. There was certainly nothing, then, which would have justified the use

of the term lupus, and the boy had been under the care, before I saw him, of very skilled observers who had not used it. I ought to have said that in addition to the large patches which I have described, the whole of the back and parts of the belly were covered with an inflamed lichenoid eruption, amounting in some instances almost to small boils. I ought also to have laid especial stress on the fact that the large patches, although very numerous and almost covering the limbs, were nowhere arranged with symmetry. The treatment under which these large rupial sores healed and passed into a characteristic condition of lupus occupied about a year, and was for the most part of a very mild character. Mercury and arsenic were in the first instance pushed, and seemed to do harm rather than good. We were content afterwards to give bark and use a weak tar lotion and ointment. Under these remedies the patches skinned over, but you will note that they are still spreading serpiginously as a quiet, non-ulcerating form of lupus. The chief interest of the case seems to be in its being an example of extreme activity of the infective process in the first instance, and also in its making it probable that the early stages of lupus are those of inflammation rather than of new growth. It illustrates, also, what I have repeatedly asserted, that activity of infection-processes is greatest in the young. It is scarcely necessary to remark on the lesson which it teaches as to the paramount necessity of destroying, by the most energetic means, the initial patch when the patient is a young child. We must not wait for the disease to declare itself by unmistakable characters as lupus, but if a young child gets an unhealthy ulceration of unusual character, caustics or escharotics must be used at once with the greatest freedom, the great danger of systemic infection being kept clearly in sight. (Ibid, p. 114.)

Lupus (?) *Rhino-scleroma.*—This malady affects in the first instance the nostrils and upper lip, and is attended by great thickening of the parts. The nostrils may be plugged by a very firm and remarkably indolent growth, which ulcerates but slowly, and which resents injury but little. If you cut it or scrape it away, it quietly grows again. By slow degrees the disease may extend into the nostril, perforate the septum, and destroy the soft palate. It keeps to the skin and mucous membrane, and does not involve muscle or bone. It does not cause gland disease. Its subjects are young adults. So slow is its progress, that its final stage has, as yet, scarcely been observed. Excepting in Vienna, where a series of examples of it have been recorded, rhino-scleroma would appear to be of the most extreme rarity. In this country only a single case of really typical character has been observed. It fortunately fell under the care of Dr. Payne and Dr. Semon, and was by them carefully studied, as it had indeed already been by Professor Cornil in Paris. You will have noticed in my de-

scription that this malady resembles lupus in many features. It occurs in young adults, it begins in a part liable to irritation, the outlet of the nostrils, and I might have said, it apparently sometimes is excited by the irritation of discharges; it spreads by contagion of continuity and contiguity, it keeps to skin and mucous membrane, and shows none of the more marked characteristics of malignancy. It differs from lupus in that it has no apple-jelly growth, that it occurs in one particular part only, and that it but rarely inflames or ulcerates. Finally, we have as yet no proof that it can infect the blood and produce distant growths. To come to its histological features, we have excellent data from several different sources, and the reports are, with some minor exceptions, very unanimous. Kaposi, Geber, Mikulicz, Cornil, and, lastly, Dr. Payne, agree in reporting the presence of cell-growth in the deep skin, not distinguishable from that of granulation tissue. The small round cells making up this tissue are very numerous, and are often collected around blood-vessels. A few large and peculiar cells are to be found, and in some parts the interpapillary prolongations of the Malpighian layer appeared to grow downwards, after the pattern of epithelial cancer. All these features have been observed repeatedly in lupus. It remains to be added that Frisch in Vienna, Cornil in Paris, and Dr. Payne in London, have succeeded by staining processes in proving the presence of bacilli in connection with the larger cells of rhino-scleroma. They are not those of tubercle or lupus, but "short, thick, almost ovoid bodies, often coloured at each end and colourless in the middle" (Payne). (Ibid, p. 115.)

Lupus Erythematosus. — *Its Varieties.* — The first subdivision should, I think, be into lupus sebaceus and lupus erythematosus proper. In the former category I would count all cases in which there is conspicuous implication of the follicles, all in which the well-known dried orange-peel condition is seen. Many of these cases are comparatively slight, and remain for long strictly local. As Kaposi has well remarked, they rarely leave the face and head. Sometimes they, like lupus vulgaris, are non-symmetrical. Their significance as revealing symptoms is far less grave than that of the true erythematous form. Some of them have little or no erythematous congestion around the patches, but in others it may be considerable. At the other end of the chain, and in strong contrast, I would place the cases in which erythema is the conspicuous feature, and almost the sole one. In many of these there is no roughness of the surface, and the orifices of the sebaceous glands are at no stage unduly conspicuous. In these the disease often spreads rapidly, the arrangement is always symmetrical, the hands and feet are often attacked, and outbursts of febrile illness are not infrequent. Between the typi-

cally sebaceous and the typically erythematous, we have many cases which, in varying proportions, combine the peculiarities of both. For purposes of clinical convenience I would arrange the cases of lupus erythematosus proper into groups; first of those in which the disease was restricted to the face and head; secondly, those in which the hands as well as the face were affected; thirdly, those in which the disease showed a tendency to become general, that is to extend to neck, shoulders, upper arms, and possibly to the trunk; also, fourthly, those in which erysipelas had repeatedly occurred. In our last lecture I spoke of the great danger that attaches to lupus erythematosus in its typical forms, and especially of the risk of a fatal attack of erysipelas. Kaposi's testimony on this point is very strong; indeed, he would appear to have met with erysipelas very frequently, and speaks of an "erysipelas perstans faciei," with which I am not familiar. The circumstance that he drew from the experience of a large hospital in which the patients remained for long periods, whereas my cases have been chiefly observed in private practice, may explain some discrepancies. He would be likely to encounter more serious complications than have fallen to my lot. The best published portrait of a purely erythema lupus with which I am acquainted is that in the New Sydenham Society's Atlas; one which I now show you, published at the Hôpital St. Louis, Paris, and designated scrofulide erythematose, is also excellent, and has the merit of being a photograph. Those given by Hebra show the sebaceous and mixed forms only. (Ibid, p. 117.)

Lupus.—Syphilitic Lupus.—A large number of the diseases of the skin in the later periods of syphilis are lupoid in character. By that statement it is meant that they occur without symmetry, that they are infective and serpiginous, and that they leave scars. In these features they differ wholly from the eruptions of the secondary period, which are symmetrical and exanthematous and show no tendency to infective spreading. A syphilitic lupus, like other forms of lupus, may spread indefinitely, and may last for years; indeed, unless cured by treatment, it will as a rule never get well. We occasionally see very severe secondary eruptions, especially those of the rupia class, gradually slide when nearly cured into lupoid peculiarities, that is, some of the patches may take on serpiginous spreading. As a rule, however, syphilitic lupus is decidedly late (that is tertiary) in its appearance. It may simulate any of the known varieties of lupus, and the closeness of the resemblance may be most deceptive. I cannot see that anything is gained by disuse of the term lupus in connection with syphilis. If instead of it we employ such terms as horse-shoe sores, serpiginous ulceration, and the like, we lose in clearness of meaning and do not gain in anything. (Ibid, p. 117.) (Mr. Hutchinson, Brit. Med. Jour. Jan. 7, 14, 21, 1888.)

Lupus.—*Kaposi's Treatment.*—Kaposi, of Vienna, considers no remedy specific against lupus; excision of diseased tissues he regards as most often successful. His favourite applications are—(1) Zinc chlorid., antimon chlorid., āā ʒ 2½; irid. Florent. pulv. gr. 75; acid. hydrochloric. con. ♏ 75. This paste may be left in place twenty-four hours. (2) Kaposi also employs Hebra's arsenical paste:—Arsen. alb. gr. 15; hydrarg. sulph. rubri, gr. 45; ung. emoll., ʒ 6. This paste is generally allowed to remain in contact with the tissues twenty-four hours. (3) Pyrogallic acid may be used in combination with ung. emol., one to ten. Also, (4) Iodini pur. gr. 75; tinct. iodin. ♏ 74; glycerin, ʒ 2½, may be applied.—In surgical instruments Kaposi prefers Vidal's spoon curette. (Medical News, Oct. 15, p. 453.)

Lupus.—Mosetig and Hortmann's Treatment by Lactic Acid.—Following the plan suggested by Mosetig, Hortmann records two cases treated by this acid; and one of them was completely cured, the other very nearly so in a comparatively short time, and, with exception of pain of a bearable degree, without any drawback. Pure lactic acid retained in contact with the unaffected skin for twelve hours causes merely slight reddening, which fades in course of a short time. It is frequently to be preferred to the sharp spoon, since minute disseminated spots, lying in the neighbourhood of the larger patches, escape the action of the spoon, and subsequently give rise to fresh outbreaks. "Lactic acid seeks out the diseased tissue—as a dog does game—surely finds it, and effectually destroys it." It can be used in different modes; it may be painted on, applied as a paste, injected subcutaneously, or employed pure. Painting it on is not a method to be recommended, since this, to propuce good results, must be repeated very frequently. The pastes are compounded of equal parts of pure lactic acid and kaolin, spread thickly on linen, applied and covered with gummed paper. For parenchymatous injection into the diseased areas, Mosetig employs a 50 to 70 per cent. solution in water. Pure lactic acid is thus used,—three or four folds of cotton or a piece of cotton wool is dipped in the acid, then squeezed moderately, and placed directly on the ulcerated surface, over the pledget is laid gummed paper to prevent evaporation, over this again some wool, and, finally, a bandage. Mosetig prefers this latter plan, and Hortmann's cases were so treated. The acid induces a tolerably intense though bearable pain, which lasts about ten hours. The duration of the pain indicates that of the action, and it is therefore advisable to remove the dressing so soon as the pain ceases. The surface is then cleansed with water; fatty applications are to be avoided, since these are difficult to remove, and interfere with the efficacy of the remedy. After bathing, the wound is covered with gum paper, and this with wool. The repetition of the acid can-

not be made directly, else dermatitis and œdema may arise; one must therefore wait till the reaction and the irritation occasioned by the previous dressing have subsided. The resulting cicatrices are smooth and white. (Dr. Jamieson's Report in Edinburgh Journal, Jan., p. 677.)

Lupus Scars, &c.—Lassar's Treatment.—In the Berlin Klin. Wochenschrift, Dr. Oscar Lassar gives an interesting account of how he improves the scarred faces, &c., of lupus, cancroid, and acne rosacea, resulting in tumour-formation, and shows photographs of the parts operated on before and after he had interfered with them. In lupus he proceeds as follows:—He uses a blunt curette to remove gently all proliferating tissue; the normal as well as any epithelial islands are to be spared. After careful stopping of bleeding, the thermo-cautery is used on every suspected spot through the whole thickness of the skin; then the eschar is immediately rubbed off with sublimate gauze, and so on, by alternate burning and rubbing, a spotless, clean, and dry wound-surface is obtained, and then this is to be treated in the following manner:—Instead of letting the wound cicatrize under the crust as fortune may will, the granulation tissue is carefully watched, and for many weeks repressed till a genuine epidermic formation rewards the patience and toil of the operator. The patient should also return monthly to have every suspicious point touched with the Paquelin. (Dr. Troupe's Report in Edinburgh Journal, Jan., p. 674.)

Mustard Paper.—An Italian pharmacist, in the Journal de Médicine, gives the following formula for a convenient mustard paper: Gutta percha (in scraps), 4 parts; bisulphide of carbon, 100 parts; ground mustard (freed from oil by pressure), q. s. The rubber is to be dissolved in the carbon; strong paper is to be dipped in the fluid, the mustard sprinkled upon it, and a roller passed over it to secure the firm adherence of the mustard. The paper may then be cut in convenient sizes. Heat is not needed in applying it. Moisture is generally sufficient to secure its adherence. (Medical News, Dec. 24, p. 738.)

Naphthol in Skin Diseases.—This substance, which was first introduced by Kaposi, has been made the subject of a number of interesting observations by Dr. Allen, of New York. He has used it mostly as an ointment or collodion dressing, at times as a solution in alcohol or oil. He has notes of several cases of psoriasis, in which the application of naphthol collodion greatly benefited the patient, removing the scales and decreasing the thickening of the patches after a few applications. He warns against the substitution of naphthaline for naphthol, as not the same thing, and not giving the same results. In eczema the scaly varieties were found to be those most benefited. In the

moist forms the irritation produced was found to be too great, unless employed in a starch paste in strength of from 5 to 15 grains to the ounce. The itching was almost always removed, but the application at first caused smarting if too strong. It did good in eczema of the scalp, and some cases were quickly cured. In general idiopathic pruritus, pruritus heimalis, senilis, and ani, it invariably acted well, giving speedy relief, and proving often curative. Carbolic acid has been regarded as the great anti-pruritic, but naphthol appears to him quite as efficacious, if not more so, and has other advantages. Dandruff of the scalp, whether associated or not with alopecia, has been without exception cured, though he adds that relapses have occurred. If the drug is pure no toxic effects are, he believes, to be feared. He used it most commonly as an ointment made with vaseline or lard, containing from 5 grains to a drachm to the ounce. Also as the following paste—Beta naphthol, 5 to 30 grains; pulveris amyli, 3 drachms; adipis, 1 ounce; m. ft. pastam. Sig. Apply thickly. (Dr. Jamieson's Report in Edinburgh Jour., Nov. p.477.)

Pemphigus.—*Unna's Paste for.*—℞. Ol. lini, aquæ calcis, zinc. oxidat., cretæ, āā, equal parts. M. f. pasta. Sig. For external use. (Medical News, Feb. 25, p. 213.)

Pityriasis Versicolor.—*Ihle's Application for.*—Ihle employs (L' Union Medicale) resorcin in the following combination: Resorcin, gr. 75 to ʒ 2½; ol. ricini, ʒ 11¼; alcohol, ʒ 37½; balsam. Peruv., ♏ 8. (Medical News, Oct. 29, p. 507.)

Pruritus Senilis.—*Machiavelli's Treatment.*—For the treatment of this obstinate affection Machiavelli recommends (Gaz. Med. Ital.) external remedies as most efficacious. As general measures, baths medicated with sulphate of potassium, and the avoidance of all excess in diet. The patient must abstain from scratching, and when a paroxysm of itching comes on, he should dab on the pruriginous spots a one-to-two-per-cent. solution of carbolic acid in water. If papules appear and the pruritus is worse at night, cloths soaked with the same solution are to be bound on. An itching scrotum is to be worn in a suspensory bandage enveloped in absorbent cotton. In persistent itching, specially of the female genitals, repeated bathing with the following:—Carbolate of sodium, 25 grammes; cologne-water, 75 grammes; glycerine, 100 grammes; water, 300 grammes, M.—will be useful, especially if followed by compresses soaked in the following:—Distilled water, 300 grammes; alcohol, 100 grammes; hydrochloride of cocaine, 75 centigrammes. M. When the patient cannot resist the impulse to scratch and does scratch unconsciously at night, the parts are to be painted with: Ammoniate of mercury, 1 gramme; oxide of zinc., 4 grammes; white vaselin, 40 grammes; cocaine, 25 centigrammes. M. (New York Jour., Dec. 24, p. 725.)

Pruritus of the Vulva.—Verrier's Treatment.—Verrier advises (Gaz. de Gynécologie) the following lotion, which may be used by saturated tampons in obstinate cases: Acid. carbolic. solut. 1 part; morphiæ acetat. $\frac{4}{5}$ part; acid. hydrocyanic. dil. 6 parts; glycerin 20 parts; aquæ 240 parts. (Medical News, Oct. 15, p. 452.)

Psoriasis.—At the Medical Society on March 12th, 1888, Mr. Malcolm Morris read a paper entitled, "Is Common Psoriasis a Constitutional or a Local Disease?" This affection was first described under the name of lepra, and was so known by Willan and Sir Erasmus Wilson. He showed to the Society a typical case of the affection. Almost all authors stated that the causes of the disease were shrouded in obscurity. Had it anything in common with the well-known constitutional diseases, such as the eruptive fevers, syphilis, or tuberculosis? In psoriasis there was no rise of temperature and no malaise; it only occurred in individuals in really good health, and it only attacked one organ of the body—i.e., the skin, for the affection known as psoriasis of the tongue bore no relation to it. Syphilis, on the other hand, was a general constitutional disease, and attacked the skin, glands, and mucous membranes. Sir Erasmus Wilson had stated that patients with psoriasis appeared in good health; yet there must be some unperceived weakness of constitution. He himself, in investigating these cases, had only been able to find constitutional disease in 5 per cent. of his cases. Dr. Liveing had described two varieties of psoriasis—of the young and of the gouty; and he stated that, though anatomically they were alike, yet they differed in their general features, and it was necessary to distinguish between them for purposes of treatment. Dr. Liveing further said that a person might suffer from gouty psoriasis, even though he had never been the subject of articular gout. Sir Alfred Garrod, in 1881, said he had come to the conclusion that psoriasis was not connected with gout in the same way that eczema was. When a patient suffering from psoriasis developed articular gout, it had been noted that the psoriasis disappeared from the skin. His explanation of this fact was as follows. A certain standard of health was necessary for the existence of psoriasis; and many illnesses—such as the specific fevers, menorrhagia, pneumonia, and even pregnancy—would, by lowering this standard, cause the cutaneous affection to disappear for a time. Passing to the action of remedies, he pointed out that all the drugs used to cure psoriasis by internal administration also tended to lower the system. The continued use of purgatives and anti-gout remedies did this; and it had been shown that arsenic, while in anæmia it increased the number of red corpuscles, in health it diminished them. He thought it resembled ringworm closely, and a parasite had been found for it, which existed deep down in the papillary layer of the skin,

though its symmetrical distribution was unlike the work of a parasite. In favour of its blood origin were the facts of its symmetry and heredity; in favour of its local origin, the action of remedies, soap alone being able to cure it if well rubbed in. His conclusions were as follows: (1) that psoriasis commenced in the epidermis, and that it was not a blood disease; (2) that its cause was at present unknown; (3) that it was a local and not a constitutional affection; (4) that it could be more effectually cured by local than by internal measures. (Lancet, Mar. 17.)

Psoriasis.—Besnier's Treatment.—Besnier (Revue Gén. de Clin. et Thérap.) uses:—℞. Naphthol (β) 1 part; adipis, 9 parts. The affected part is to be well rubbed with this salve before retiring, and flannel worn during the night; in the morning a bath of hot soapsuds should be taken. If no improvement follows after five days of this treatment pyrogallic acid is used, 5 or 10 to 100. To avoid irritation friction is employed on small surfaces only, and these surfaces are changed every four days. For extensive surfaces Besnier employs a dressing of: ℞. Acid. pyrogallic., acid. salicylic., āā gr. 90; ether and alcohol, q. s. to liquefy; add collodion flex., ℥ 20. (Medical News, Dec. 17, p. 714.)

Psoriasis.—Vidal's Treatment.—Vidal (Jour. de Med. et Chir.) believes that the oil of cade is the most efficacious remedy for psoriasis, and employs the following formula:—Glycerole of starch, 100; green soap, 5; oil of cade, 100. M. The patient is directed to rub this in every evening, sleep in a flannel gown, and wash the medicament off in the morning. (New York Med. Journal, Dec. 24. p. 725.)

Scabies.—*Naphthol.*—The following is recommended by Kaposi in the treatment of scabies:—Adipis, 100 parts; sapo viridis, 50 parts; naphthalin, 15 parts; cret, alb. pulv., 10 parts. M. The same has been used in acne with success. (American Journal, March, p. 286.)

Seborrhœa.—*Its Differential Diagnosis.*—The dermatosis with which "seborrhœa" is most likely to be confused is undoubtedly psoriasis. Both attack the scalp, and both present guttate mummular and circinate scaly lesions on the body and limbs. In advanced cases the yellow-pink coloured eruption and the yellow greasy cakes are very distinctive, but even in less marked types the scales of seborrhœa are always seen to be softer and duller than the bright, brittle micaceous scales of psoriasis, and it never presents the same raised red area. Single lesions in their declining stage may be difficult to differentiate, especially upon the legs. Single patches of acute eczema may also be confused with the non-seborrhœic form, but a careful examination will always show some other characteristic signs of seborrhœa, though it may be on some distant part of the body.

Tinea circinata, whether it assumes the ringed or the patchy, dry eczematous looking form, should be readily distinguished by its more sharply defined border, more nearly circular shape, and its drier and smaller scales. The skin at the margin is in most cases frayed, but if very small vesicles be found there they are at once decisive. With syphilis there should be no chance of confusion, but as cases present themselves, which have been treated with mercury and iodide of potassium, the mistake can evidently be made. The circinate syphilide is altogether a more pronounced lesion than the seborrhœic eruption, its borders are much more elevated, the scales (if present) are generally more dry and scablike, the colour is duller, and the pigmentation of much deeper hue. (Dr. H. G. Brooke, p. 354; and Med. Chronicle, March, p. 493.

Seborrhœa.—Treatment.—No internal remedy seems to be of much avail. Arsenic is certainly no preventive, for I have seen two acute attacks occur in a patient who had been taking the drug for some months for an old and persistent eruption of psoriasis. The main reliance must be placed on external measures. Chrysarobin will remove the eruption, but it is unnecessarily strong and disfiguring. The mercurial ointments are generally efficacious; of these, the dilute nitrate ointment is perhaps the best. Tar is of little, if any service. Unna strongly recommends sulphur, the employment of which in seborrhœa capitis has long been practised in this country as a domestic remedy. When active eczematous eruptions are present, it is better combined with zinc ointment or Lassar's paste. The objectionable yellow colour of the sulphur may be effectually modified by rubbing it up with a small quantity of carmine and spirit before adding the base. For the scalp it is better to substitute the oleate of zinc ointment for the oxide, as being less disfiguring and more easy of application. But the use of sulphur amongst the hair is often so much objected to by patients, even those of light complexion, that I generally substitute the oleate or nitrate of mercury, using as a base the thin, odourless Oleum Deelinæ, which penetrates readily among the hair and does not clog. A little liquor carbonis detergens may be added to relieve the itching. Salicylic acid is useful, and may be employed in combination with zinc oxide, as in Lassar's paste, or with one of the mercurial ointments. A mild resorcin ointment is also effectual. For the removal of some of the more resistant remnants, I have found that the impermeable rubber or gutta-percha medicated plasters are more effectual than the corresponding ointments. As a prophylaxis against future outbreaks, Unna insists on the necessity of a prolonged and vigorous attention to the scalp. In almost every case in which seborrhœa occurs on the body, the scalp will be found to be affected with the disease. What the cause may be

which excites it to spread after a quiescent stage, it may be of years, is still unknown; but the frequency with which fresh attacks spread from the scalp, shows that the existence there of the disease, even in a slight form, is a constant source of danger. The head should, therefore, be frequently and thoroughly washed with soap and water, and one of the above ointments persistently applied. (Dr. Brooke, p. 354; and Med. Chron., March, p. 493.)

Soziodol in Skin Diseases.—Oscar Lassar (Therap. Monatshefte) finds that this remedy in five and ten per cent. strength, in the form of dusting-powder and paste (with zinc, starch, and vaseline or lanoline), brings inflamed and irritated skin to a mild desquamation without causing reaction, and that it exerts a rapid and beneficial influence on recent as well as on more chronic eczemas, tinea circinata, tinea tonsurans, impetigo, and ulcers. In many respects the action of the remedy is similar to that of salicylic acid, but it may be used stronger without the danger of exciting artificial inflammation. (American Journal, March, p. 310.)

Tinea Versicolor.—*Its Contagiousness.*—Hublé (Annales de Derm.) has recently made some researches upon tinea versicolor, its transmissibility, and its consequences in judiciary medicine. Kaposi has denied its contagion, and Hardy has stated that it is but slightly contagious. Hublé protests against these views and cites nine cases of contagion, from man to woman, or *vice versâ*. He mentions, moreover, two cases of mediate contagion through the means of flannel undershirts. The author gives his experience with inoculation. In the first series of experimants scales scraped from a patch of disease were simply applied to the skin, with negative results at the end of thirty days. In a second series of experiments the skin was rubbed until red, and the scales were applied to the surface by means of glycerine and plaster, positive results appearing at the end of two weeks. In a third series in one spot the scales were removed with a lancet, and in another region the exfoliating epidermic scales were simply wiped off, and the tinea scrapings were applied by means of glycerine and gold-beater's skin; in both places evidences of the disease were soon (in a few weeks) visible. (International Journal, Oct., p. 597.)

Ulcers of the Leg.—*The "Tin Dressing" for.*—Dr. Watson, of Boston, describes a dressing devised by him as follows, in the Boston Med. and Surg. Journal. There is one principle in the treatment of chronic ulcers of the leg which he thought hastened the healing process materially. The analogy was seen in the freezing of a sheet of water. If the water were smooth the skimming of its surface with ice went on more rapidly than if it were thrown into an uneven surface by the wind. In the same

way if the surface of the ulcer were made flat and smooth, the epithelium would extend across it more rapidly than if, like the rough water, its surface were occupied by granulations, and the open surface were above or below the level of the surrounding skin, as in the exuberant or indolent ulcer respectively. It had, therefore, been his practice in such cases as required it to secure this condition by the application of a shield of sheet-tin on top of the ulcer to bring the surface even with the surrounding tissues. The dressing was known at the City Hospital as the "Tin dressing," and its method of application was as follows: The ulcer and surrounding surface were soaked in corrosive sublimate, 1 part to 4000, and thoroughly cleaned; a bit of protective was then placed upon the surface of the ulcer, covering a little more surface than the ulcer actually occupied, protective or some substance having a perfectly smooth surface was used in order that the new epithelium, which shot in from the edges over night, so to speak, should not be pulled off by adhering, as it did to cheesecloth or compress or anything having meshwork-woven surface. The tin made to fit the surface on which it was to lie is then placed on the protective, and the whole as well as the surrounding tissues covered with a dry corrosive sublimate gauze dressing, which was held in place by an evenly applied bandage extending from toes to knee. Ulcers which had been lagging for days beforehand would often take a rapid start under this dressing. (Medical News, Oct. 15, p. 451.)

SYPHILITIC DISEASES.

GONORRHŒA.—*Treatment by "Antrophores."*—Dr. Hugo Lohnstein, of Professor Zuelzer's polyclinic in Berlin, has found, as the result of observations on ninety-three cases, that gonorrhœa, both in its acute and chronic form, usually yields more readily to systematic treatment by a kind of medicated soluble bougies called antrophores than to other methods. These antrophores are made by Herr Stephan, a pharmacist in Treuen, Saxony, and consist of a nickel-plated metallic spiral containing a soft medicated material, the basis of which is gelatine and glycerine—the same kind of thing, in fact, as the hektograph and other "graph" compositions are made of. Before the introduction of the bougie the urethra is well syringed out by a Zuezler apparatus with a 2 per cent. solution of boracic acid. Regarding this Dr. Lohnstein remarks that the mere passing of urine by the patient is quite insufficient to cleanse the passage from secretion, as anyone may easily convince himself by examination with the endoscope. As a rule, a single bougie is sufficient during twenty-four hours. Indeed, when the introduction was repeated several times a day no better result was obtained, but, on the contrary,

the urethra appeared to be irritated by the instrument. These bougies must be differently applied in acute and chronic cases. In an actute gonorrhœa, where the prostatic portion of the urethra is not affected, the bougie should not be introduced into it, the surgeon being able to tell when the prostate is reached by the greater resistance caused by the circular muscular fibres. In chronic gleet, where the prostatic portion is affected, the bougie should be made to enter it, but ought always to be kept from entering the bladder, which may bring on strangury and even cystitis. The surgeon guards against this by asking the patient to tell him when he feels as if the instrument were in the bowel. He then knows that it is in the prostatic portion. The medicament mostly used by Dr. Lohnstein is thallin. For the first and second day bougies containing 2 per cent. of this substance are employed; even this strength occasionally produces a sensation of burning. On the third and subsequent days a bougie with 5 per cent. of thallin can usually be borne. It is not found advisable to allow patients to introduce the bougies themselves, for they are liable to set up hemorrhage and to push the instrument into the bladder. In an acute case the thick secretion is usually changed by the second or third day into a thinner and clearer fluid; during the next few days the quantity of this gradually diminishes, and the secretion has generally entirely ceased in from eight to fourteen days' treatment. Complications such as are produced by injections very rarely occurred; epididymitis never; cystitis in two cases only, and in these it was probably due to faulty introduction of the bougies. Several cases were cured that had resisted other measures. The most difficult class of cases to treat is, of course, the chronic form. Here it was often found that, though the secretion could be greatly reduced, any attempt to lengthen the intervals of the introduction of the bougies was liable to be followed by a return to the original condition. Where the prostate and its ejaculatory ducts are affected, it is often necessary to have recourse to bougies of different kinds—e.g., zinc, tannin, rhatany, nitrate of silver, quinine, or sulphoichthyolate of ammonium. Of course, where, instead of the mucous membrane generally being inflamed, there is a small ulcerated patch, these bougies are useless, and the endoscope must be employed as a guide to special local treatment. (Lancet, Mar. 24.)

Gonorrhœa in Women.—Its Diagnosis.—Noeggerath, of Wiesbaden, concludes an article in the Deutche Med. Wochen. of Dec. 8, 1887, with the following points, on which he bases his diagnosis of gonorrhœa: 1. The illness of a healthy woman occurring soon after marriage, although marriage often disturbs a woman's health, but should not produce evident symptoms of disease. 2. A purulent discharge, in the absence of deep ulceration,

granulation, sarcoma, carcinoma, or scanty, glassy-looking secretion, with small, deep red erosion on the os uteri. 3. Catarrh of the exits of the ducts from the vulvo-vaginal glands. 4. Small, pointed condylomata on different portions of the vulva. 5. A circle of such condylomata about the anus. 6. The presence of colpitis granulosa. 7. The existence of salpingo-perimetritis. 8. Ovaritis. (Medical News, Jan. 14, p. 39.)

Ichthyosis Linguæ Syphilitica.—*Scraping.*—The syphilitic affection of the tongue and mouth known as keratosis or ichthyosis linguæ, or as leukoplakia specifica, which is due to unequal development of epithelium over different papillæ, and which is by no means a very easy affection to treat successfully, caustic, astringent and disinfecting applications having but very little effect upon it, is, according to Dr. Horovitz, best managed by mechanical scraping. He uses a sharp spoon with which he removes the thickened epithelium; in order to accomplish this several sittings may be required. He scrapes away the indurated tissue until the surface presents the appearance of a multitude of minute bleeding points showing that the vascular loops in the papillæ of the dermis have been reached. Iodo-glycerine, glycerine of borax, or a 10 per cent. solution of sulphate of copper is applied to the raw surface. The pain is usually not severe, but in the case of sensitive persons cocaine can be used. (Lancet, Jan. 7, p. 35.)

Syphilis.—*Abortive Treatment.*—At the Medical Society, on Feb. 20th, 1888, Mr. Jon. Hutchinson read a paper on the Abortive treatment of Syphilis, of which the following is an abstract. The paper commenced by a general statement that the author's recent experience had been that when mercurial treatment was begun early for the indurated chancre, no secondary symptoms followed. He was in the habit of assuring patients that if they would persevere with the mercury they would escape the occurrence of sore throat and eruption. Year by year his confidence in the practicability of suppressing the secondary stage increased. By the term "abortive treatment" he meant a treatment which aimed at this result. It was not to be considered as synonymous with curative in its strongest sense, and it certainly did not imply annihilation of the malady. It was quite possible that after a successful abortive treatment and an entire omission of all secondary phenomena the patient might yet have tertiary symptoms. Tertiary symptoms must, he thought, be considered apart, for there was a sense in which it might be contended they were not syphilis. He defined the stages of the disease as being the primary before the blood became contagious, the secondary whilst it was contagious, and the tertiary after it had ceased to be so. Probably a treatment begun only after definite symptoms, such as induration of the chancre, had shown themselves, was

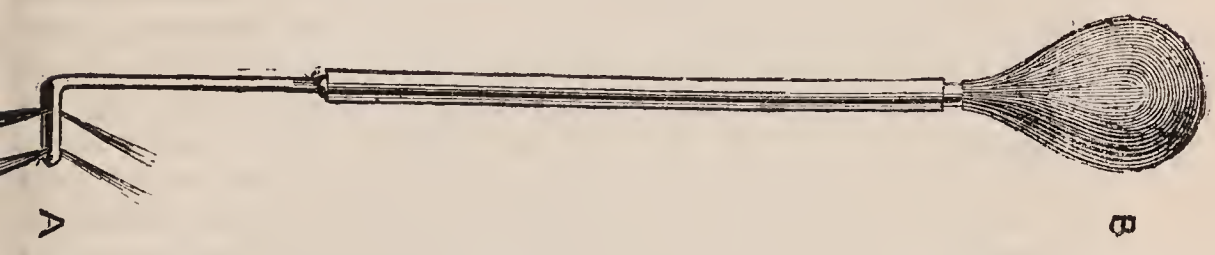
begun too late to prevent that contamination of all the tissues from which, after a long interval, tertiary phenomena might result. The author defended the terms "specific" and "antidote" in reference to the use of mercury in syphilis. He believed that the mineral was antagonistic to the life of the microbe, which in all probability existed as the cause. The problem for the practical surgeon was how best to use mercury so as to secure the death of the microbe. He admitted that certain facts seemed to prove remarkable tenacity of life in the parasite. Thus, for instance, mercury might be given for six months, and all symptoms of the secondary stage during that period be suppressed; and then, if the drug were suspended in the course of a few weeks, a modified rash might show itself. The facts recorded by the older surgeons (especially by Mr. Judd), were quoted in proof that short courses attended by ptyalism, such as used to be employed, did not procure the abortion of the secondary stage. It was contended that the investigation on this point must begin anew now that we had adopted the practice of giving small doses over very long periods and avoiding salivation. The author's practice had for long been of this latter kind, and had consisted in the administration of single-grain doses of grey powder, three, four, five, or six times a day, according to the case. The following facts were appealed to in proof of the antidotal power of mercury in reference to syphilis: that it always caused the induration of a hard chancre to melt away; that it always caused the secondary eruptions to fade; and that it always modified greatly, if it did not wholly prevent, the evolution of the secondary stage when given before it commenced. To prevent the tertiary stage, it might be necessary to use the antidote before there was an infection of the blood—that is, probably, before the induration of the sore and adjacent glands. This consideration introduced the question as to the stage at which mercury ought to be prescribed. The author's practice had hitherto been never to give it until, by the induration of the sore, he felt sure of the diagnosis, and never to wait longer. It had, however, often occurred to him that it was perhaps not for the patient's benefit to wait even so long as that, but, on the contrary, having regard to the serious import of syphilis and the comparatively innocent nature of the drug, it might be well to give it in all suspicious sores. He was aware that much might be said on both sides in reference to this proposal, and it would only be in a minority of cases, where the patients were well informed as to the nature of his risks and willing to persevere for a long time, that it would be feasible. He wished, however, to express very strongly his belief that the efficacy of mercury as an antidote was much influenced by the period at which it was commenced, as well as by the length

of time during which it was taken. Mr. Hutchinson concluded his paper by disclaiming strongly any wish to claim for himself or his own mode of treatment any superior efficacy over that adopted by others. He believed that most were at the present day attempting abortive methods, although hesitating to adopt that name. He wished to show that such hesitation was groundless, and that really the abortion of the disease—i.e., the suppression of its natural stages—was what we ought definitely to aim at. (Lancet, Feb. 25, p. 372.)

Syphilitic Conjunctivitis.—At a recent meeting of Royal Society of Physicians of Buda-Pesth, Docens Dr. Goldzieher made an interesting communication on conjunctivitis syphilitica. Syphilitic affections of the eyelids had to be divided into three classes, namely, primary lesion (initial sclerosis), exanthem, and gumma. Discussing the various pathological conditions in syphilis of the eyelids, he said that the symptoms of diffuse syphilitic conjunctivitis had not yet been described as a whole. He related two cases which showed that there really existed a sort of granular ophthalmia which was due to syphilis. The first case was that of a man aged 32, who had contracted syphilis six years before, and had suffered from chronic iritis since that date, so that iridectomy had to be performed. For the last few months an inflammation of the conjunctiva had supervened, which had been treated for a long time. On his admission into the hospital, erythema and diffuse swelling of the eyelids, with the formation of granulations in the mucous membrane, were found; besides this, there was swelling of the lymphatic glands in the region of the ear and the neck. After energetic treatment by mercurial inunctions for four weeks, the conjunctiva regained its normal appearance, and the patient was discharged cured. The second case was that of a man aged 26, who had contracted syphilis two years previously. Six months before his admission into the hospital he was attacked with conjunctivitis in the left eye, and was, like the first patient, treated without success by applications of the nitrate of silver, sulphate of copper, &c. He presented exactly the same changes in the conjunctiva as the first case, and, moreover, keratitis profunda, iridochoroiditis, and lymphadenitis universalis. After an anti-syphilitic course of treatment, he was also quite cured. Dr. Goldzieher remarked that similar changes of the conjunctiva were observed in syphilitic inflammation of the tarsal cartilage. As the conjunctiva possessed a layer of adenoid tissue, and the infiltration referred to above was only to be looked upon as a follicular vegetation of this layer, the morbid process above described had, therefore, from the anatomo-pathological standpoint, to be considered as being identical with syphilitic lymphadenitis. (British Medical Journal, March 17, p. 609.)

AFFECTIONS OF THE EYE AND EAR.

A Cucaine Strabismus Hook.—The action of cucaine is strictly local, and depends on its power of causing the peripheral vessels to contract. This hook is designed to bring the anæsthetic into direct contact with the sub-conjunctival tissues to be divided. It consists of a strabismus hook of the ordinary pattern, hollowed, and having four small perforations on the bent limb A. At the extremity of the handle B is a small rubber globe, which is removable. The one shown is unnecessarily large. It might be replaced by a small hypodermic syringe. In filling this instrument care must be taken to expel all air, or an emphysematous condition of the conjunctiva might result; this, although harmless, is ugly. Squint operation, even on nervous, frightened children, can be done painlessly. As a test, I have done an enucleation on a very timid woman. Some slight pain was experienced on dividing a mass of vascular adhesions between the upper lid and globe, and again on the final snip; but the operation was



practically painless, and I feel no doubt that ether narcosis may be avoided in many cases with advantage. (Mr. E. A. Browne, Liverpool, British Med. Journal, Dec. 10, p. 1277.)

Ciliary Blepharitis.—*Treatment.*—Dr. W. Roeder observes that obstruction of the nasal duct and blenorrhœa of the lacrymal sac, as well as conjunctival inflammation, may occasion disease of the roots of the cilia, for the pus cells combine with the stagnant tears and form an emulsion which easily overcomes the resistance of the fat of the sebaceous follicles and penetrates into the hair-follicles. The cilia then swell, and the inner hair sac becomes infiltrated with pus cells. The pus cells are at first retained by the swollen hair, but ultimately burst through and form crusts between the cilia. If the process be allowed to continue, a contraction of a cicatricial character occurs in the outer root sheath, so that the new hair can no longer push its way forward, but grows backwards, thus assuming a hook-like form. Recovery from the blepharitis occurs only after all diseased hairs are extracted. In addition, however, it is imperative that the disease of the lacrymal passages should be completely cured. (Practitioner, Feb., p. 132.)

Defective Vision in Infants.—*Its Detection.*—It will be self-evident that no exact tests of vision can be applied, and that an

infant's sight may easily seem worse than it is. The chief things to notice are whether the child turns its eyes towards the window, or follows the flash of the mirror in the dark room (or what comes to the same thing, turns its head away or blinks its lids under the same tests), the presence or absence of nystagmus and the state of the pupils. No doubt all babies do not learn to notice, i.e., follow and look at objects, at the same age—I believe that they usually look at a bright light thrown steadily into the eyes a day or so after birth, but that from three to six weeks' education is necessary to enable them to follow a moving object in such a way as to give the appearance of intelligence or "noticing"—and it is failure to "notice" that raises the mother's apprehension, especially if she has had other children whose behaviour was different. If the infant's eyes oscillate rhythmically, or even wander constantly though irregularly, its sight is almost certainly bad, for we know very little of primary nystagmus from nervous disease in infants. The pupils are less useful in babies than in adults, because the movements of the infant's eyes at once embarras observation, and lead to associated movements of the pupils independently of alterations in light, and because the natural range of the pupillary action in infants seems to be less than it is when the eye has attained full development. Though I need hardly add that in infants as in adults serious loss of acuteness of vision is compatible with fairly active pupils, I think it is less generally known that, in children at any rate, the light reflex may be present even though the child be absolutely unconscious of light, a condition of which I shall be able to give several instances further on. In examining the pupils of a baby, avoid touching the face or head, and so provoking movements of his head or eyelids. (Mr. E. Nettleship, London Ophthalmic Hospital Reports, July, 1887, p. 355.)

Mydriatics and their Uses.—Dr. Jackson, of Philadelphia, is quoted as follows by the Ophthalmic Review for August, 1887, on this subject: Simply to dilate the normal pupil, a single drop of either of the following solutions suffices: (1) Cocaine hydrochlorate, gr. j, water, ♏ xxv, or about 1 to 25; (2) homatropine hydrobromate, gr. j, water, f℥j, or about 1 to 500; (3) atropine sulphate, gr. j, water, f℥v, or about 1 to 2500; (4) duboisine sulphate. gr. j, water, f℥x, or about 1 to 5000. Or daturine, hyoscyamine, or hyoscine salts used of the same strength as duboisine. Of the above the homatropine solution renders the pupil rather the most rigid, and its effects pass off in from twenty to fifty hours, but cocaine is the most generally valuable dilator of the pupil. The dilatation it produces lasts but ten or twenty hours, is never so great in strong as in feeble light, so that there is less annoyance from exposure to the light: it produces proportionately the smallest impairment of accommodation; and

the dilatation it produces can be promptly overcome by the use of eserine, making it especially valuable after middle life, when there is a chance of the occurrence of glaucoma. And this drug has yet another advantage. In spite of the readiness with which it yields to myotics, in spite of its inability to prevent entirely the reaction to bright light, tested in a weak or moderate light, cocaine produces a wider dilatation of the pupil than any other mydriatic. And this superior power of cocaine is especially manifest in old people, whose pupils often do not dilate well under other mydriatics. (Medical News, Oct. 8, p. 425.)

New Bandage for the Eye.—Dr. Wolfberg recommends a new material for use as a bandage in cases of ophthalmic disease. It is made by Eugen Müller of Dusseldorf, who has named it "Hydrophilous Paper for Eye Bandages." It consists of linen and cotton wool made in the form of paper and impregnated with 28 per cent. of glycerine. When used it should be saturated with a disinfecting fluid, squeezed, and then placed over the eye, wet wool being applied as an external dressing. (Practitioner, Feb., p. 132.)

Ophthalmia Neonatorum.—*Preventive Treatment.*—(1) Cure of all cases of chronic vaginal discharge before labour by suitable local applications. (2) Irrigation of the vagina during the second stage of labour when vaginitis is known to exist. This plan, adopted in London, at Queen Charlotte's Hospital, is almost uniformly successful. The solution in use is hydrarg. corros. sublim., 1 part to 2000. Nature has herself indicated this method by copiously secreting a clear vaginal fluid before and during labour, and the rush of liquor amnii immediately preceding birth; the action of these fluids is more than mechanical, for experiment proves that a freely diluted blennorrhœal secretion is non-infectious, although, to be with certainty innocuous, it should not be more than 1 per cent. (3) By assisting the fœtal eyes to pass beyond the perineal edge without resting. This is easily done by hooking the finger round the perineal edge and drawing it down. (4) By wiping the eyes with a clean cloth at birth of head. (5) By instilling an antiseptic solution into the child's eyes at birth, if the mother is known to have vaginal discharge. To do this in all cases is unnecessary. Credé's method—solution used, argent. nit. 2 per cent. (6) To wash the face first, never in the water in which the body has been cleansed. (7) To retain one sponge or flannel specially for the child's face, and to insist on scrupulous cleanliness. (8) The nurse to wash her hands after adjusting the mother, before touching the child. (9) Not to unduly expose the child to bright light, draughts, &c. (10) To protect the child from flies, with a thin veil. 11) To carefully remove the child from the immediate vicinity of another similarly attacked. (General

Isolation.) I cannot too forcibly reiterate that "ophthalmia neonatorum" is an infectious disease, and all medical officers or superintendents of crèches, workhouse schools, or hospitals should treat it as such, and remove the infected child to an isolation ward at once. (12) To guard the one eye if the other is affected. (Special Isolation.) This is very difficult in infants, and depends entirely on the care and intelligence of the nurse, the constant removal of discharge, and the general watchfulness which cannot be defined. (Dr. P. H. Mules, p. 370; and Medical Chronicle, Jan., p. 283).

Pupil-Symptoms met with after Injuries to the Head.—Mr. Hutchinson, jun. (Ophth. Rev.) has been investigating the condition of the pupil after injuries to the head, and makes the following brief statement in regard to the subject as far as yet investigated: In concussion of the brain, during the stage of collapse, the pupils are neither contracted nor dilated, and they respond to strong illumination. This response is not always as rapid as it should be normally; not infrequently the pupils tend toward slight myosis, and inequality in size is occasionally seen. When one pupil only is markedly dilated, there are sometimes signs of irritation, probably by small hemorrhages into the cortex on the same side. Whatever view may be taken as to the condition of the cerebral circulation, it is not doubted that the cerebral functions are, to a more or less complete degree, suspended by the violent shaking that the brain undergoes. Hence, the condition of the pupils would be expected to be the same as during sleep and the anæsthetic stage of chloroform inhalation, and in animals deprived by experiment of their cerebral lobes. In a few cases of concussion, fixed mydriasis on both sides has been noticed for a time. Although it is at present impossible to fully account for the cases in which one-sided mydriasis follows concussion and persists for a considerable period, still these cases are exceptional, without evidence of severe injury to the brain. With the onset of inflammatory symptoms, the pupils become strongly contracted, although the lesion may be at some distance from the corpora quadrigemina. (New York Med. Journal, Dec. 3, p. 642.)

Purulent Otorrhœa.—*Antiseptic Treatment.*—Quite remarkable results have lately been obtained by the strictly antiseptic treatment of purulent otorrhœa suggested by Dr. W. Chrystie. Specula have all been kept in a 1 to 20 solution of carbolic acid, after having been carefully washed in hot water, and cotton-carriers are in each instance heated to a red heat before being used. The external canal and fundus of the affected ear are first carefully dried out with ordinary absorbent or borated cotton sterilized holders and the fundus is then mopped absolutely clean with 1 to 40 carbolized solution cotton tufts. This in turn gently

dried out, and a powder consisting of iodoform 1 part, boric acid 6 parts, is then insufflated. By this method the duration of treatment has been shortened to two or three applications in many cases, and an average of about eight treatments is sufficient to cure most cases, even when of some years' duration. Thorough treatment of the always diseased naso-pharynx is carried out with great care in all cases of purulent otitis. (Medical News, Nov. 19, p. 596.)

Retinoscopy.—Zieminski (Rec. d'Ophthal.) in a somewhat lengthy paper on this subject, draws the following practical conclusions: (1) Retinoscopy is the name given to that method of objective optometry devised by Cuignet, and to which he gave the name of keratoscopy, and consists briefly in observation of the retinal shadows. (2) The importance of retinoscopy is incontestable in numerous cases where other methods of objective optometry do not give sufficiently exact results. (3) The most exact method of determining the degree of ametropia by retinoscopy is that advocated by Parent, and consists in the employment of correcting lenses placed in the front of the eye of the patient. To render it of practical advantage, we must be enabled to determine approximately by means of the rotation of a mirror the degree of ametropia by simple observation of the phenomena of retinoscopy, and only make use of certain correcting lenses for stating precisely the degree of the anomaly. In emmetropia and feeble ametropia the reflection of the illuminated part of the pupil is very bright; the shadow is very faint but well defined; the limit between the illuminated part and the part in shadow of the pupil appears as the segment or arc of a large circle; this limit is almost rectilinear in emmetropia and weak myopia. The part of the pupillary plane in shadow is comparatively much greater in extent than the light part. In moderate degrees of ametropia the reflection of the illuminated part of the pupil is less intense; the shadow is distinct and in the form of a crescent; the difference in extent of the two is not very great. In high degrees of ametropia a large part of the pupil is but slightly illuminated and ill defined; the shadow is very dark and in the shape of a narrow crescent, and during the movements of the mirror this shadow moves slowly across the pupil. (4) To determine the existence of astigmatism, the mirror must be rotated around its vertical or horizontal axis. If the shadow moves obliquely across the pupillary plane, an astigmatism with oblique principal meridians is present. If, on the contrary, the shadow moves horizontally or vertically, the mirror must be rotated round an oblique axis. (5) The plane mirror is preferable to the concave mirror. (6) Retinoscopy may generally be employed without the use of mydriatics. (New York Medical Journal, Feb. 25, p. 221.)

STENOSIS OF NASAL DUCT.—*Treatment by Intermittent Nocturnal Use of Removable Styles.*—The method which I adopt is to slit the canaliculus, either upper or lower, with Weber's knife, and pass probes in the ordinary way for some days or weeks or months as required. If the case is one of extensive narrowing, or if there is much bone disease, I often leave in a leaden style for some days, removing it now and then for the purpose of syringing and cleaning. As soon as the tenderness resulting from the first operation has subsided, I get the patient to remove the style himself, and when he has gained some confidence in doing this he can readily be induced to attempt the introduction of it. If he is, in the first case, shown before a looking-glass the way you put it in, he will soon get into the way of doing it himself. It is advisable at first to remove the style only for a few hours, and gradually increase the time till it can be kept out all day. When well in practice a patient can introduce and remove his styles without the aid of a looking-glass at all. As soon as he is able to do this for himself I allow him to go home to whatever part of the world he came from, fully assured that so long as he can introduce the style each night he will have no return of the obstruction. My directions then are to introduce the style each evening on going to bed, and to remove it in the morning when dressing, before putting in his artificial eye and false teeth, and he finds no greater difficulty in doing one than the other. If at any time he does experience difficulty, or fails to introduce the style, it is time for him to come up again to have it examined into; but so far my experience has only afforded a single case where the patient, once skilled in the use of the style, failed to get it in at home, and I am therefore convinced that there is no real difficulty in the operation after the initial timidity of the patient has been overcome. As well might a dentist require his patients to come to him to have their false teeth put in, or an oculist require his cases of enucleation to attend each morning and evening to have their artificial adornments adjusted, as a style-wearer be required to dance perpetual attendance on us to have his tear passage styled each day. (Mr. A. H. Benson, p. 258.)

ZONULAR CATARACT.—*Treatment.*—I recommend destruction of the lens in all cases that are found to be of a progressive character, also in non-progressive cases where vision equal to at least twenty-fiftieths is not obtainable, after dilating the pupil with atropine. I would go further than this in exceptional cases, and say, if I found that twenty-fiftieths was not sufficient sight for the requirements of the patient, and if he or she were between the ages of 10 and 25 (which I consider the most favourable age for operation), with perhaps some myopia, and all other conditions favourable, I would not hesitate to recommend extraction. When the lens, then, has to be dealt with, there is the operation

by solution. This is a tedious process, and I hardly ever adopt it in zonular cataract. I have been most satisfied with the suction operation. Having dilated the pupil, I make a free rupture of the capsule across the pupil extending from margin to margin; a similar rent is made from above downwards, keeping the needle well in the anterior part of the lens. The capsule is extensively ruptured in this way to cause its retraction well behind the iris, and so avoid secondary operations; the needle should not penetrate too deeply for fear of rupturing the hyaloid or dislocating the lens. A light bandage is placed over the eye, the patient is kept quiet, and atropine freely used to dilate the pupil. After two or three days, or more, according to the condition of the eye, extraction is performed by a Teale's suction curette. This is accomplished by making an incision in the outer part of the cornea, halfway between the limbus and centre, with a double cutting edged needle from 3 to 4 millimètres broad. Through this wound the curette is introduced into the area of the pupil, taking care not to push the open end behind the iris or too deeply into the pupil. Suction is then applied by the mouth, and by this means the whole of the pupil can be easily und rapidly cleared. The patient is then placed in bed, with a light bandage over both eyes; atropine is again used to keep the pupil dilated, and in the course of a week or ten days recovery may fairly be expected. (Dr. David Little, p. 372.)

MIDWIFERY AND THE DISEASES OF WOMEN.

CANCER OF THE UTERUS.—*Treatment in Advanced Stages.*—Betrin, of Geneva, in the Nouvelles Archives d' Obs. et Gyn. of Oct., 1887, reports excellent results from the use of tampons dipped in equal parts of terebene (hydrated turpentine) and any convenient oil—almond, olive, &c. An abundant preliminary douche of a deodorizing solution of permanganate of potassium should be given, the parts dried with cotton, and from three to five tampons dipped in the mixture of terebene and oil should be placed in contact with the diseased tissues, and retained by a cotton tampon. The results in deodorizing and disinfecting the diseased tissues have been excellent, and no interference with the excretory functions has been observed. (Philadelphia Medical News, Nov. 19, p. 598.)

ENDOMETRITIS, ETC.—*Treatment.*—The chief indications are, first to remove the diseased membrane as completely as possible, and then endeavour to induce a healthy growth in the new one. These two indications are best fulfilled by the use of the curette, and by subsequent injections of strong solution of iodine or

iodised phenol. Why should we spend months and years in making applications to a membrane which may be removed in a few minutes, with the certainty of its being speedily replaced by at least as good, but probably a better one? That the new membrane may be diseased is true, but this objection will apply to every form of treatment, and speaking generally we may say that the success which has attended any therapeutic agent has been in direct proportion to its power of destroying the diseased membrane. This explains to us the marked benefit derived from the use of powerful caustics, especially the fuming nitric acid. In Dublin we have had remarkable success with this agent, but it is inferior to the curette in three ways. 1. It necessitates previous dilatation of the cervix. 2. Its action is rendered uncertain by hemorrhage and other discharges. 3. It destroys the tissues upon which we depend for diagnosis. My present practice is to curette in every case of disease affecting solely or chiefly the uterine mucous membrane, which does not yield to attention to general health, douching and astringents, and I can strongly recommend it to others as having the following advantages, which I may briefly recapitulate. (1) It is efficacious both as a diagnostic and as a therapeutic agent; and (2) its employment is safer and simpler than any method which involves the dilatation of the cervix. (Dr. W. J. Smyly, p. 394.)

Extra-Uterine Gestation.—*Diagnosis; Treatment by Electricity.*—At the British Gynæcological Society, on Feb. 8th, 1888, Dr. James Aveling said that to the Americans was due the credit of having established the efficacy of the electrical treatment of extra-uterine gestation. Although electricity had been employed as a fœticide more than thirty years ago, it received little attention until Dr. J. G. Allen brought a case before the Philadelphia Obstetrical Society in 1872. Numerous cases had since then been published by American gynæcologists. More recently it had been employed in this country; but the method of using it had been erroneous. In one case, three needles of improper metal were inserted, and used with the positive pole of a thirty-celled constant-current battery. The result was that the mother died. Experience proved that a moderate faradic current was sufficient to kill the fœtus in early gestation, and the employment of such strong means was quite unnecessary. The brilliant results of the operation for dealing with these cases when death from laceration and hemorrhage was imminent had blinded some gynæcologists to the necessity of adopting a plan of treatment which would prevent these fatal ruptures. Objections had been raised on the ground that a diagnosis in tubal pregnancy was never called for before the rupture of the tube; that there were no symptoms before rupture was established; that to apply the electric current to every kind of pelvic lump, under the suspicion

that it was an extra-uterine pregnancy, would be a most haphazard and dangerous proceeding; that the destruction and death of the child was of no consequence at all; the organ which could not be destroyed by the electric current, but which would go on growing and would go on bleeding when it was torn, was the placenta; finally, that supposing the fœtus had passed through the stage of tubal rupture and remained alive, one had no right to murder the child. All these objections could be easily answered. Any practitioner who met with a case presenting the history and subjective symptoms of ectopic gestation should endeavour to clear up his doubts by making a physical exploration of the pelvic organs. The history of a case of misplaced gestation was of great importance, and should never be overlooked. As a rule, erratic pregnancy was found to occur most frequently during a prolonged sterile period following a first confinement. The patient generally believed herself to be pregnant, and that there was something unusual about her condition. Pain of a peculiar paroxysmal and agonising character was a most reliable guide. The ordinary supervening signs of conception would be noticed. Metrorrhagia also was an important symptom. If in addition to the foregoing symptoms a rounded, elastic, tender tumour was discovered behind or to one side of the uterus, rapidly increasing in size and vascularity, there was no other pelvic tumour with which it could be confounded. The condition and situation of the uterus also gave valuable diagnostic information. As regards treatment, laparotomy after rupture was a necessary and life-saving operation, but the object of all treatment should be to prevent rupture, and thus render the more dangerous operation unnecessary. No one would wait until an aneurysmal sac had burst before using means to arrest its progress. Electricity might be employed with every chance of success during the first four months. No doubt the earlier it was had recourse to the better, a satisfactory diagnosis having been arrived at. There were two theories as to the way in which electricity caused the death of the fœtus; one that it was brought about by electrolysis, the other that death was due to nervous shock. He believed that death was due to the tetanic contractions of the fœtal mass, resulting from the repeatedly broken current of an induction machine. To be effective the current should be as strong as the patient could bear, not turned on all at once, but gradually increased to that point. It should be continued for at least ten minutes, and repeated every day until the effects upon the tumour became evident. These effects, which confirmed the accuracy of the diagnosis, were cessation of pulsation, diminution of resistance, and reduction in the size of the tumour; and besides these, retrograde changes in the breasts, and retiring of the cervix uteri from the pubes.

In a case he had treated a short time since, he had used Gaiffe's induction machine, and employed only half its power. The negative electrode was applied to the most prominent part of the cyst through the vagina (it might be found convenient to pass this through the rectum in some cases). The positive electrode was placed on the abdominal wall opposite the tumour. No pain or inconvenience was felt after the applications. They were only four in number, for, on the fifth day, when about to repeat the faradisation, such marked change in the cyst was apparent that he was convinced gestation had been arrested. This proved to be true, and the patient was now in health, and no trace of the tumour could be felt. (British Medical Journal, March 10, p. 535.)

Hydrocephalus as a Complication of Labour.—At the Obstetrical Society, on Nov. 2nd, Dr. J. W. Swaine, after pointing out the rarity and dangerous nature of this complication, gave the particulars of seven cases occurring in his own practice, in three of which delivery took place spontaneously, and four required the assistance of art. In one of the former the mother died apparently from rupture of the uterus. This accident proved fatal in rather more than a fifth of the cases collected by Dr. Keith, the cause being the great stretching of the lower segment of the uterus, and the difficulty thus occasioned to the process of retraction over the head. Dr. Swayne laid great stress on an early diagnosis of this complication, and on the extreme danger of an expectant treatment, and pointed out the great importance of reducing the size of the child's head by puncture as soon as a correct diagnosis had been formed. He related cases showing the disastrous results which have arisen from delay or from attempted delivery with the forceps, owing to mistaken desire to save the life of the child. (Lancet, Nov. 12, p. 963.)

Hysterectomy.—*Its Results.*—I say it deliberately, hysterectomy is an operation that has done more harm than good, and its mortality is out of all proportion to the benefits received by the few. What is the mortality of this operation, now so often and so unnecessarily performed? We shall never know. It put it at 25 per cent., though it is probably much higher. I may be wrong; others can correct me by giving their total results. In other words, one out of every four women operated on by hysterectomy has till now died after an operation for the removal of a tumour that has, as a rule, a limited active existence, and that of itself rarely shortens life. We have no right to rush our patients into such a fearful risk, yet this is done every day. In abdominal surgery responsibility seems to have become old-fashioned and gone out of date. (Dr. T. Keith, p. 410.)

Parasitic Fœtus.—As the Pathological Society, on Feb. 21, 1888, a report of Mr. Bland Sutton and Mr. Shattock on a case of Parasitic Fœtus was read. It occurred in a boy seventeen years of age. There was no family history of malformation. He had suffered from small-pox when a child, which had likewise infected the parasite. The latter, which was attached at the umbilicus, consisted of two divisions, an upper and a lower. The upper consisted of the upper limbs, the lower of the pelvis and lower extremities. Intestinal gurgling was obvious in the pedicle leading to the lower segment. No testicles could be felt, there was no spontaneous movement, no heart sounds could be heard, and no pulse was palpable. It passed urine involuntarily. perspired simultaneously with the autosite, possessed pubic hair, and the penis was capable of feeble independent erection. Its temperature was below 95° F. Other examples of similar malformation were referred to, and the case was regarded as one in which an original single ovum had undergone cleavage of the germinal area, the resulting segments growing at a different rate. In reply to the President, Mr. Shattock said that there was no evidence of muscular movement in the limbs of the parasite. (Lancet, Feb. 25, p. 371.)

Placenta Prævia.—*Treatment.*—The measures that come into successive use are:—1. Rupture of the membranes. 2. Apply a firm binder over the uterus. 3. A plug may be used to gain time, but it must not be trusted; watch closely. 4. Separate all the placenta that adheres within the lower zone, and observe closely. If no hemorrhage, wait awhile. The uterus may do its own work; if not, dilate the cervix by the water bags. Again pause and observe. If Nature fail to deliver, we resort to the forceps, which gives the best chance to the child, or turn. In following this order of procedure, we strictly follow the law of physiology. We do not force Nature, but obey her. Current medical literature is full of examples proving the value of these precepts, and not a few cases published as illustrations of the success of other methods, especially of turning, are more correctly explained by the fact, probable in many, certain in some, that in carrying out the operation of turning, the placenta had been detached from the lower zone. Where the principles enunciated by me have been thoroughly and intelligently observed, as has been done on a considerable scale, as by Dr. Murphy, the success has been unexampled. (Dr. Robert Barnes, p. 383.)

Puerperal Fever.—Its Prevention.—*Antiseptic Rules for Monthly Nurses.*—(1) Two bottles are supplied to each patient; one contains a solution of perchloride of mercury, of the strength of one part to one thousand of water, tinted with litmus (called

the 1 in 1000 solution), the other carbolised oil (1 in 8). (2) A small basin containing the 1 in 1000 solution must always stand by the bedside of the patient, and the nurse must thoroughly rinse her hands in it every time she touches the patient in the neighbourhood of the genital organs, for washing or any other purposes whatsoever, before or during labour, or for a week after delivery. (3) All sponges, vaginal and rectal pipes, catheters, &c., must be dipped in a 1 in 1000 solution before being used. The surfaces of slippers, bed-pans, &c., should also be sponged with it. (4) Vaginal pipes, enema tubes, catheters, &c., should be smeared with the carbolised oil before use. (5) Unless express directions are given to the contrary, the vagina should be syringed twice daily after delivery with warm water, with a sufficient quantity of Condy's fluid dropped into it to give it a pale pink colour. (6) All soiled linen, diapers, &c., should be immediately removed from the bedroom. N.B.—These rules are for protecting the patient from the risk arising from accidental contamination of the hands, sponges, &c. It is, therefore, hoped that they will be faithfully and minutely adhered to. (Dr. W. S. Playfair, p. 399.)

Prevention of Puerperal Fever.—Rules for the Accoucheur.—In his management of a case, the medical attendant should adhere to all those precautions laid down for the guidance of the nurse (p. 401). He should make as few examinations as possible, and he should be most careful in his management of the third stage, that is, to follow down the uterus during the birth of the child's body, and to express the placenta, and then to keep up firm pressure for some time before putting on the binder. Further, it is a most useful precaution, as against the introduction of air, to make the patient lie on her back as soon as the child is born; a firm application of the binder acts in the same way. If there is any laceration of the perineum it should be stitched. The plan I like best is to place some lint soaked in the antiseptic solution in the vagina, then carefully to use a hot sublimate douche to the parts, and stitch the torn edges by means of a curved perineum needle and silkworm gut. In this operation the best position for the patient is the dorsal one. Hartmann's sublimate wood-wool diapers are, I think, better than ordinary napkins wrung out of antiseptic solution. When the perineum is being dilated, its stretching may be facilitated by employing a sponge wrung out of hot (1 in 40) carbolic lotion, and by lubricating it with the antiseptic vaseline. We think, with these precautions, it is not necessary to give an antiseptic vaginal douche before the child is born, unless the labour is very tedious, and there is considerable pressure on the soft parts. In such circumstances, a 1 in 40 carbolic douche should be used. It is worth noting, in reference to this matter, that puerperal septi-

cæmia is not common when the labour is an easy one, and according to Winckel, it is very uncommon in rapid confinements. All these measures have as their object to prevent the entrance of any poison into the system either before or during the labour. What should be our plans after the confinement? *Question of Douches.*—I must say I think the use, twice a day, of a hot vaginal (1 in 40) carbolic douche is most grateful to the patient, and tends to keep the parts pure and clean, but it should only be given by a nurse who will adhere to all the rules we have mentioned. I think the sublimate douche should be reserved for cases in which the hand has been introduced into the uterus (operative midwifery), or in which, from something decomposing in the womb, there is a fœtid discharge. In such cases, a hot sublimate douche (1 in 2000) used by means of a glass uterine tube, is most beneficial. We think, as undoubtedly there is risk attending the use of the sublimate solution, it should only be used by the medical attendant; the routine vaginal douches employed by the nurse can be rendered antiseptic with carbolic acid. Further, in using the sublimate solution, care should be taken by pressure with one hand above the uterus, and by holding the perineum back with the other, to avoid leaving any of the fluid behind. *Position of Patient.*—After labour, for a few days she is best kept on her back, and in passing water she should use the knee-elbow position, which will facilitate the drainage of the vagina. To aid in the contraction of the uterus some recommend giving after labour a mixture of ergot, digitalis, and quinine. I have used this combination with advantage. (Dr. J. W. Byers, p. 402.)

Uterine Contractions during Pregnancy.—As a brief *résumé* of my papers on the subject I may state: 1. That during the whole of pregnancy the uterus contracts at intervals, varying much, but commonly from five to twenty minutes, remaining so for a shorter time—say, from three to five minutes. 2. If we place the examining hand at the time of contraction on the uterus, it will be firm, pear-shaped, and the fœtal parts not readily, if at all, detectable; if we place our hand on during the state of rest, or allow it to remain on till the firm state is passing off, then the outline of the uterus is indistinctly felt, sometimes it cannot be felt at all, while the fœtus is to be more or less clearly made out, and can often be pressed with the fingers outside into various positions, even as early as the fifth month. 3. By noting these facts we are enabled with ease in general to decide as to the existence of normal pregnancy, to diagnose between this and various tumours, both uterine and abnormal, between pregnancy and distended bladder, and other conditions easily called to mind by the practitioner. 4. That these intermittent contractions have the physiological use of

emptying the loaded uterine veins, changing highly carbonised blood for that more aerated. 5. That from observations I have made I am inclined to think that there is some pretty constant relationship between the accumulation of this highly carbonised blood and the fœtal movements, and also between the fœtal movements and the uterine contractions. Finally, I can confidently recommend the consideration of this additional help in the recognition and diagnosis of pregnancy as one easily learnt and readily applied. It has in my own practice proved to be of the greatest service for many years. (Dr. Braxton Hicks, p. 375, and Lancet, Jan. 24, p. 114.)

Tonic Uterine Contraction without Completeness of Retraction.—At the Obstetrical Society of London, on Oct. 5, 1887, Dr. J. Matthews Duncan read a paper, in which he called attention to the occurrence of a rigid, spastic condition of the uterus, especially just after delivery, without complete retraction and while the uterus had no content opposing complete retraction or closing. In this state the hard uterus had a globose cavity. He more particularly called attention to the occurrence of hemorrhage from the placental site while the uterus was in this state of firm spastic contraction with incomplete retraction, and mentioned cases. He regarded this hitherto unknown or unrecognised condition as probably affording an explanation of the well-known difference of opinion among obstetric authorities, some asserting the occasional occurrence of hemorrhage after delivery from a hard contracted uterus, some denying it. A similar condition, he believed, occurred very rarely in the unimpregnated uterus. (British Med. Journal, Oct. 15, p. 822.)

PRACTICAL MEDICINE.

MEDICINE AND GENERAL THERAPEUTICS.

Art. 1.—ON THE TREATMENT OF ACUTE RHEUMATISM.

By Julius Pollock, M.D., F.R.C.P., Senior Physician to Charing Cross Hospital, London.

A few years ago the treatment of rheumatic fever was most unsatisfactory. I have seen alkalies, quinine, blistering, and other reputed remedies tried in a large number of cases, alone or in combination, but without being at all impressed by their value; and well might Sir William Jenner, when President of the Clinical Society, express the doubt and uncertainty with which he used to approach the treatment of articular rheumatism under the old *régime*. But some ten or twelve years ago a new and improved method of dealing with the disorder came into operation; and it is only due to Dr. Maclagan that he should have the credit of having been the first to use salicin as a remedy, which ultimately led to the introduction of salicylate of soda, one of its derivatives. I cannot say that I have had much success with salicin, though I have tried it in a number of cases, but he must be blind indeed who cannot perceive the great value of the soda salt. There may be some doubt as to whether its use shortens the duration of rheumatic fever, but beyond question it robs the disease of some of its most painful symptoms. In a few days, sometimes hours, the temperature is brought down, the inflammation and pain in the joints subside, and the patient is in most cases practically convalescent. It is not claimed for salicylate of soda that it will prevent the occurrence of heart complications, or even hyperpyrexia, but it lessens the chance of either mischief by rapidly reducing the fever. It must also be borne in mind that the drug is not an absolute specific. Where shall we find one? It fails to relieve or cannot be tolerated every now and then. But this is no more than what happens with quinine in ague, or iodide of potassium in syphilis. Salicylate of soda sometimes produces sickness, deafness, tinnitus aurium, and a peculiar kind of cerebral disturbance; but these disagreeable effects quickly disappear on a discontinuance of the drug, and seldom return upon its resumption after a short interval. The salicylate has been charged with producing serious cardiac depression, and even causing sudden death; but the evidence on these points is not very clear, and personally I have never witnessed any

such effects. In treating a case of articular rheumatism, the salicylate of soda may be given in doses of 10, 20, or even 30 grains every two, three, or four hours, according to the severity of the symptoms and the effect produced. Where there is evidence of great acidity, some alkali (five to fifteen grains of the bicarbonate of potash) may be usefully combined with each dose of the salicylate, which is best given in some aromatic water to conceal its somewhat acrid taste. It is important to keep up the action of the drug for some days after the disappearance of the fever, as the premature disuse of it is apt to lead to a return of all the symptoms—a so-called relapse. Towards the close of a case of rheumatic fever, the joints are not unfrequently left rather swollen and painful; it is then that iodide of potassium (internally), and iodine paint (externally) are so useful. When quite convalescent, the patient should have tonics, and especially steel and quinine; and if rheumatic pains linger, the salicylate of quinine, in five-grain doses, three times a day, is often of much service. Other salts of salicylic acid will probably be found useful in the treatment of rheumatism; and lately a new preparation, "salol," has been introduced. It is a salicylate of phenol, and has been used a good deal in America, with, I believe, satisfactory results. But it may be asked, What is to be done in those cases of articular rheumatism in which the salicylates are not successful? Well, it is unfortunate when this happens, but we may fall back upon large doses of salicin, upon alkalies, or upon the excellent alkaline quinine prescription of Sir Alfred Garrod. Quinine and bicarbonate of potash are rubbed up together with a little mucilage and some aromatic tincture, in such proportions that each ounce and a half of the mixture contains five grains of quinine (in the form of carbonate) and thirty grains of potash. This dose may be given every four hours for as long as may seem desirable.

Of course, all cases of rheumatic fever must be kept in bed, and properly dieted. The most suitable nourishment in the earlier stages is the usual beef-tea and milk "fever" diet, but to this may soon be added some farinaceous food, eggs, and afterwards fish. Rheumatic fever is a disease of debility, and it is very desirable to keep up the strength of the patient; but in some cases the too early resumption of meat has seemed to be followed by a return of the rheumatism. Further information on this point would be of value. Stimulants are not absolutely necessary, nor often needed, in cases of articular rheumatism; but they may be required at times, and should be administered in accordance with the condition of the patient. The bowels should receive attention, but no active purging is required, especially as the movements necessitated by any action of the bowels are attended with considerable pain in severe cases. On the other hand, opium or morphia, which may well be used hypodermically, is often of great service, alleviating

the pain in the joints and allowing the patient to get some sleep. When cardiac mischief arises in a case of acute rheumatism, it should be treated in accordance with the plan adopted in such cases, the consideration of which is outside my subject. I must, however, say something about the treatment of hyperpyrexia, a matter of much interest and importance. It is unfortunate that in this severe condition, where most we want its aid, the salicylate of soda, though it was originally introduced as an antipyretic, should entirely fail. Nor can I say much that is favourable of any other of the reputed febrifuges, such as quinine, antipyrin, &c. In truth, we are driven, in the treatment of hyperpyrexia, to the application of external cold, and although some years ago I expressed a very doubtful opinion as to the efficacy of this method, a further knowledge of the subject has led to a considerable modification of my original views. There is now, I think, no question that the careful and judicious use of the cold bath or cold pack holds out the best chance of saving life in these truly formidable cases. The most important precaution would seem to be that the application of cold should be gradually and cautiously applied so as to avoid shock. This may be accomplished by placing the patient at first in a bath the temperature of which is not much below 80°F., and gradually reducing the temperature until the desired effect is produced. This bath may have to be repeated more than once perhaps, and the use at the same time of injections of ice-cold water into the rectum may be of service. Where a bath is not available, or thought to be undesirable for any reason, the cold pack may be tried. In cases where ice is not used, the patient's body and limbs are wrapped closely in a single sheet, which has been previously wrung out of cold water (temperature 50° to 60°). A blanket is then thrown loosely round him, and he is allowed to remain undisturbed for about half an hour, when the same process is gone through again, and repeated until the temperature is sufficiently reduced. When the ice pack is employed, a hip bath, or other suitable receptacle, containing a few gallons of water, in which some large pieces of ice are floating, is kept by the patient's bedside, and his body and each limb are separately wrapped in pieces of old sheeting which have been wrung out of the iced water, each piece being renewed as often as it begins to feel warm to the hand. No other covering of any kind is put over the patient. In this way the temperature may be very rapidly reduced, and it is necessary to be careful that it is not brought too low. It should not be allowed to fall below 99° F. Amongst many others, two cases have recently been reported which tend strongly to show the value of external cold in the treatment of hyperpyrexia. One is by the late Dr. Carrington, at the Clinical Society on Feb. 25th last, and the other by Dr. Frederick Taylor, in the Lancet of March 12th, 1887.—*Lancet, Nov.* 12, 1887, *p.* 951.

2.—ON INTERMITTENT, RECURRING, OR SO-CALLED "CYCLICAL" ALBUMINURIA.

By George Johnson, M.D., F.R.S., &c.

It is a well-known fact that in the vast majority of cases of albuminuria the proportion of albumen varies at different periods of the twenty-four hours. In cases of persistent albuminuria associated with structural degeneration of the kidneys it will commonly be found that the urine passed at bedtime, and which has been excreted after food and exercise, contains about twice as much albumen as that passed before breakfast, and which has been excreted after prolonged abstinence from food and rest in bed. Again, it is common enough to meet with cases in which, while the urine which is passed after resting in bed and before breakfast is quite free from albumen, that which is excreted after food and exercise contains albumen in greater or less amount. For instance, a few days since, a boy, aged ten, was brought to me on account of the frequent recurrence of albuminuria after an attack of scarlet fever six months ago. The parents, who came with him, brought two samples of his urine; one passed at 7 p.m. the day before, after a railway journey, but *before his dinner*; the other passed before breakfast. Both these specimens. carefully tested by picric acid and heat, were found quite free from albumen. He had breakfasted on fish about an hour before his visit, and the urine which he passed in my room contained a considerable amount of albumen. In this case, as in many similar cases, there can, I think, be no question that the immediate cause of the albuminuria was the passage into the circulation of some products of imperfectly digested food. I have met with numerous cases in which, while the urine passed before breakfast has been almost invariably free from albumen, that which has been secreted between breakfast and bedtime has been more or less persistently albuminous. In other cases, however, when the urine has been tested at different intervals during the day, the albumen which has been present after one meal has disappeared before the next, to reappear an hour or two after; and in such cases the influence of food has been conclusively shown. I have often observed and demonstrated the influence of food in the case of hospital patients whose urine, having lost all trace of albumen under the influence of an exclusive milk diet, has again become albuminous after a meal of solid food.

In another class of cases, exercise, and even the erect posture of the body, have been more influential than food in the production of recurrent albuminuria. Thus, in one of my patients lately—a youth, who was gradually recovering from acute albuminuria—it was found at one period that, although no albumen appeared after breakfast so long as he remained in bed, soon after he assumed the erect posture a trace of albumen was found in the urine, whether

before or after breakfast, although he remained in the same warm room; so that a lowered temperature could have had no influence in the causation of the albuminuria. The only probable explanation is that the erect posture caused some congestion of the kidneys, and consequent escape of albumen, by the gravitation of blood into their weakened and relaxed vessels. Some years since the brilliant career of a very distinguished physician was cut short by renal disease, the onset of which was indicated by albuminuria, which at first occurred only after walking exercise. The sufferer told me that he first discovered the condition by testing his urine after a walk. The secretion had then a dark colour, which made him suspect the presence of bile; but on the addition of nitric acid he found, to his surprise, that the urine contained a large amount of albumen. At that time he was apparently in good health, and for a considerable period afterwards the urine remained normal at all periods of the day so long as he refrained from walking exercise. Food appeared to have no influence, but a walk of a quarter of an hour always resulted in the reappearance of albumen. After a time there was persistent albuminuria, and finally a fatal disorganisation of the kidneys.

Now, whatever may have been the primary departure from the normal condition in this painfully interesting case, there can, I think, be no question that the immediate exciting cause of the intermittent albuminuria was the excretion by the kidneys of some abnormal products of the disintegration of muscular and other tissues during walking exercise.

The main object of this communication is to insist upon the practical importance of testing the urine in all cases of intermitting albuminuria at frequent short intervals during the twenty-four hours, with a view to ascertain, and then, as far as possible, to avoid and to counteract the exciting cause of the albuminuria; and, in order that this may be effectually done, I am in the habit of instructing the patient—or, in the case of a child, the nurse or some member of the family—to test the urine by adding to about a drachm of the secretion in a test tube an equal volume of a saturated solution of picric acid, which, in the great majority of cases, affords a sufficiently trustworthy indication of the presence or absence of albumen, even without the subsequent application of heat. The comparatively rare occurrence of a precipitate of urates, of peptones, or of a vegetable alkaloid, such as quinine, on the addition of picric acid, is at once distinguished from albumen by the fact that all these precipitates disappear on the application of heat below the boiling point.

The term "cyclical" albuminuria, which has been applied to this class of cases, appears to me misleading, and therefore objectionable, for the reason that it seems to imply that the abnormal condition occurs (like a tertian ague, for instance) in a regular

cycle, without reference to external ascertainable and avoidable influences. This, however, is far from being the case, and it is a matter of primary importance to ascertain the probable exciting cause in every instance. I have met with numerous examples of intermittent albuminuria in both sexes and at all ages, from childhood to middle and advanced age. While cases of intermittent albuminuria, if neglected, tend to become permanent—on the other hand, most cases of acute and curable albuminuria pass through the intermittent stage on the way to convalescence. The condition has no special relation to the period of adolescence, as has been sometimes asserted; but a very common exciting cause amongst schoolboys and young men is the practice of frequent and prolonged cold bathing.

Each case of recurring albuminuria requires a separate and careful study; and although a treatment based upon the careful observation of the exciting causes of the condition is usually successful, yet, on the other hand, it is unquestionable that, however apparently free from other symptoms of disordered health may be the subjects of this condition, a frequently recurring albuminuria, if neglected, will almost invariably result, though it may be after many years, in structural degeneration of the kidneys. In one case that came under my observation a period of thirty years intervened between the onset of this condition in connection with scarlet fever and the fatal termination. An indiscriminate prophecy of smooth things in this class of cases may for the time be pleasing to the patient, but if this leads to the neglect of needful precautions the ultimate result will be disastrous.

It has become customary, in some quarters to speak of "physiological albuminuria." I know of no such condition. Picric acid with heat—the most delicate and trustworthy test for albumen with which I am acquainted—gives no indication of albumen in unquestionably normal urines. But if the absence of other symptoms of disordered health is to constitute a case one of physiological albuminuria, then I can affirm, from a not inconsiderable experience, that the greatest possible amount of albumen in the urine might in many cases be designated physiological.

The notorious absence of other symptoms in the early stages of very many cases of albuminuria renders it incumbent upon every practitioner of medicine and every medical adviser of a life insurance office to test the urine of every patient and every applicant for insurance, care of course being taken that the specimen obtained for examination is one passed soon after food and exercise, and not after prolonged abstinence and rest in bed. Until this now common practice becomes universal many cases of albuminuria will pass into an incurable stage before their condition is detected, while others will be blindly accepted as first-class candidates for life insurance.—*Lancet, Jan.* 7, 1888, *p.* 7.

3.—ON ALBUMINURIA A RESULT OF SEWAGE POISONING.

By George Johnson, M.D., F.R.S., Emeritus Prof. of Clinical Medicine; Consulting Physician to King's College Hospital.

In addition to other forms of disease, the result of drain poisoning, I have met with a number of cases of *albuminuria* which have been clearly traceable to that cause, and the main object of this communication is to direct attention to the fact that amongst the many causes of blood contamination and consequent albuminuria, sewage poisoning is a by no means infrequent one.

The occurrence of a case of typhoid or diphtheria in a house would, as a matter of course, excite attention to the drainage and the water and milk supply. I am anxious to show that, in the absence of other probable exciting causes of albuminuria, the possibility of sewer poisoning should be constantly borne in mind. It is needless to insist upon the practical importance of discovering the exciting cause of a disease, and thereby enabling the patient to avoid continued exposure to the morbific agency.

Case 1.—The following typical case was seen by me with Mr. Galton, of Brixton, and Dr. Langford, of East End, Finchley, on January 3rd, 1887. Mr. L. H., aged 40, had been ailing on and off since August, 1886, but he had been worse during the last month. There had been soreness of the throat and neck, with occasional rigor and a temperature of 102°. A week before my visit the urine had been tested and found highly albuminous. It was now turbid with urates; specific gravity 1030; contained (as ascertained by Esbach's method) 7 grammes per litre of albumen, and when cleared by warmth many small hyaline casts, with some epithelial and leucocyte casts, were seen. The urine was scanty, the pulse full and throbbing; no œdema. The patient was of temperate habits, he had not been exposed to cold, and in the absence of other apparent exciting cause I expressed my conviction that drain poisoning had been the cause of the sore-throat, occasional rigors, and albuminuria. On subsequent inquiry, it was found that sewer gases had been escaping into his house from two untrapped waste pipes, one connected with a washing basin in a lavatory, the other with a bath, and both going direct into the drain. At the time of my visit the patient was staying at the house of a relative, and he remained there until he recovered. He was treated in the usual way by rest in bed, milk diet, warm baths, and purgatives. In about a week the albumen began to decrease; in three weeks it had entirely disappeared, and it has not recurred. I saw him in May last year and in January of the present year, with Mr. Galton, for another complaint, and on each occasion the urine was found to be quite normal.

It is highly probable that if the cause of this man's illness had not been discovered and removed, continued exposure to the sewer

poison would have resulted in an incurable disorganisation of the kidneys, as it had done in several cases that have come under my observation.

I will now give an outline sketch of three of these cases, omitting dates and details, the publication of which might give pain to the relations and others connected with the cases.

Case 2.—A national schoolmaster consulted me at my house. He had been out of health for a year. For six months the urine had been blood-tinged. Now specific gravity 1010, slightly blood-tinged, albumen 3 grammes per litre, many epithelial casts, and some blood-tinged. There was a double aortic murmur at the base and a single systolic mitral at the apex. A modified collapsing pulse (see Chapter xxxv. of my *Medical Lectures and Essays*, "On the diagnosis of co-existing aortic and mitral incompetence"). The legs were œdematous; there was much dyspnœa; he was pale and emaciated, and hopelessly ill. It is probable that the double valvular disease was a result of uræmic endocarditis. He was living in the basement of a schoolhouse, where there was conclusive evidence of a blocked drain in the fact that after a rainfall the area was always flooded. His wife had suffered from dysentery soon after they entered the house four years before, and often since from diarrhœa. The doctor who attended her for the dysentery said they ought not to remain in the ill-drained house. I wrote to the clergyman who sent him to me, and expressed my conviction that the illness of his schoolmaster was caused by the insanitary condition of the schoolhouse. The poor man was a total abstainer, and had been exposed to no other probable exciting cause of disease.

Case 3.—Mr. W., aged 35, had enjoyed uninterrupted good health until, two years before I saw him (in December, 1887), he went to live in a recently built house a few miles from London. From that time he began to suffer from disorder of the stomach and bowels, with almost constant diarrhœa. On two occasions, in 1886 and 1887, while he was away in Scotland for three weeks, these troublesome symptoms entirely passed away, but they reappeared within a few days after his return home. Six weeks before my visit general dropsy appeared, and then the urine, which had not before been examined, was found to contain a large amount of albumen. It was of the rather light colour indicative of chronic disease, specific gravity 1020, and contained 15 grammes of albumen per litre—the largest amount I have ever found. It deposited a cloudy sediment containing numerous hyaline and oily casts, with scattered oily cells. In the absence of other probable exciting cause of the renal disease, I enquired about the drainage. There were two closets in the small house—one on the ground floor, the other on the first floor near the patient's bedroom. The patient's wife had occasionally noticed a bad smell, and a friend who often

visited them had complained of an unpleasant "earthy smell" whenever he entered the house. A case of typhoid fever had recently occurred on the premises. I expressed a decided opinion that a drain poison was the cause of the renal disease, and advised that the condition of the drainage should be thoroughly investigated.

I have since learnt from the gentleman whom I met in consultation, and from the patient's wife, that after my visit the drainage was examined, with the following result. Peppermint water having been poured into the upstairs closet was at once detected by its odour in the hall; and beneath the hall floor there was found a defective joint in the soil pipe from the closet, so that sewage had escaped into the earth upon which the floor of the hall rested. The sitting room, which was generally occupied by the patient and his wife—they have no children—opened into the small hall. Here then is the explanation of the "earthy smell" which had often been noticed; and I have no doubt that the chronic diarrhœa and the albuminuria were directly due to the same cause. The fact that the health of the patient's wife, who had been even more continuously exposed to the same poison, had not apparently suffered, is quite consistent with this explanation of the husband's illness. We have frequent opportunities of observing that out of a number of persons exposed to the same morbific agency, only a small proportion become seriously ill. Additional evidence that the diarrhœa was excited by the sewer poison is afforded by the fact that this symptom, which had continued until the time of my visit, and for some days afterwards, ceased almost immediately after he left home to stay with a friend for five weeks. The defective drainage was made good during his absence, and during the fortnight since his return home there has been no return of the diarrhœa. His general condition, too, is reported to have improved, and the albumen has diminished by one-third.

Case 4.—Miss B., aged 35, had been more or less ill since she had undertaken the management of a country hotel six months before I saw her. During the last six weeks the urine, which had not before been examined, was found to be blood-tinged. At the time of my visit the urine was brightly blood-tinged, specific gravity 1012, contained albumen (8 grammes per litre), and deposited granular and hyaline casts and oily cells. The secretion was very scanty. The patient was very pallid and feeble; there was frequent vomiting; temperature 102°; much dyspnœa, with a rapid and feeble pulse. The prognosis was most unfavourable. When I saw her a second time three days later, the symptoms were worse; there was almost complete suppression of urine, and she died on the following day. This lady was in good health when she took up her residence in the hotel. The drainage was found to be bad, and the drains were opened and repaired while she

remained in the house. I have no doubt that the illness, which commenced soon after, and which culminated in fatal degeneration of the kidney, was the resnlt of drain poisoning.

It is hoped that the publication of these illustrative cases may serve to direct more general attention to this frequent, though often unsuspected, source of renal disease.

In connection with this subject, it is not without interest to remark that amongst the numerous diseases which may result from defective drainage and consequent sewage poisoning, diphtheria is, in a very large proportion of cases, associated with albuminuria, a fact which Dr. Wade was the first to make known.

The history of such cases as have been here briefly recorded serves to illustrate a principle which cannot be too much insisted upon, namely, that the treatment of symptoms by drugs forms but a small part of the art of healing, and that one of the main objects of rational medicine is to trace disease to its cause. What a melancholy exhibition of unscientific impotence is the attempt to arrest by opiates and other astringents a diarrhœa, the result of perpetually inhaling a septic drain poison!

It can scarcely be doubted that the diarrhœa and the albuminuria having such an origin are the result of a physiological effort by the bowel and the kidney to eject the poison and its noxious products from the system; and it is obvious that an essential condition of successful treatment in such cases is the discovery and removal, or avoidance, of the exciting cause of the symptoms.—*British Medical Journal, March* 6, 1888, *p.* 451.

4.—ON POISONING BY ANTIPYRIN.

By Oscar Jennings, M.D., M.R.C.S., Paris.

Antipyrin is now so much in fashion that it has become, at any rate in France, a universal panacea, and used by the general public almost without restriction. The following case, which has recently come under my observation, shows, however, that it is not without danger even in the hands of those acquainted with its action.

Miss X., sixty-seven years of age, consulted me for rheumatoid arthritis, affecting chiefly the hands. Her maternal grandfather was gouty, and she has always suffered more or less from arthritic symptoms in the knee joints. The heart is peculiar, in that it normally beats only about thirty-five pulsations to the minute. This lady has recently complained of swelling of the hands, without positive pain, but with sensations of pricking, which interfered with her usual occupation, that of preparing and classifying specimens relating to natural history. (It may be mentioned that she is a distinguished conchologist, well known in scientific circles.) I recommended her to take antipyrin, which seemed to be the more indicated as she had already been relieved on a former

occasion of rheumatic troubles by salicylate of soda, which had, however, left her greatly weakened. The treatment was commenced on Jan. 23rd, and for eight days she took two grammes and a half of antipyrin daily, when on the 31st she was surprised to see that she was covered with erythematous patches on the arms, and at the same time felt that her eyes were uncomfortable. The following night she scarcely slept at all; the feet were icy cold; no nausea; no giddiness. The next morning she discovered that her face was red and extraordinarily swollen. The eyelids were almost closed by the swelling, and left only a narrow slit for vision. Pushing her investigations further, she saw that the rash was general and of the colour of pomegranate, arranged in patches the size of a threepenny piece, separated one from another by intervals scarcely noticeable at first sight, but distinctly recognisable upon closer examination, and about a millimetre in diameter. The patient had no appetite, and did not attempt to eat; she only took a small quantity of tea during the day, which she passed sitting by the fire. Curiously enough, this condition gave rise to no suffering; all that was felt was a strange sensation "as if the inside of the body was filled with ice." There was but little itching. The following day the condition was as follows. The eyes, which first attracted my attention, were the seat of slight catarrhal conjunctivitis—already, however, on the decline. There was irritation of the nasal fossæ, and hoarseness of the voice. Indeed, one might have thought of intoxication by iodide. The puffiness and swelling of the face had partly subsided, but the rash remained on the trunk and extremities. The pulse was twice as fast as usual, 76 to the minute; but notwithstanding this, for the patient, almost febrile acceleration, the temperature was lowered, the surface remaining cold. Beyond a slight buzzing in the ears, there was no other sensorial disturbance. As treatment, I merely prescribed small doses of tincture of belladonna. Next day the pulse was 56. The catarrhal condition of the oculo-nasal membrane was decreasing. Since then it has disappeared, and the eruption is gradually passing away. But the patient still suffers from considerable prostration and intermittent sensations of cold.

The following cases have been related to me since this occurrence, and there is no doubt as to their authenticity.

Mrs. Y. was treated by antipyrin in order to be *radically* cured of rheumatic pains. She was ordered five grammes a day. "The second day," writes Miss X., "my friends went to see this lady, who is one of the most intelligent, one of the most witty, and one of the most charming women in Paris. They found her with her head between her hands, the elbows resting upon the knees, rocking backwards and forwards, repeating incessantly, 'I don't know what is the matter with me; I remember nothing; I am becoming like an idiot; I am going mad.' She was subsequently

confined to her bed with severe gastro-enteritis for six weeks, and kept her room for three months. Lately she has improved, and has recovered her lost intelligence."

Mrs. Z. was treated by antipyrin. "Her body swelled, as did also the inside of the throat, which was obstructed to such an extent that for six hours she was threatened with suffocation. The skin was covered with red spots, without itching, and the perspiration dripped off the extremities of the fingers."

Cases of poisoning by antipyrin have been reported by Drs. Whitehouse and Barber in the *New York Medical Record*, and by Dr. Allen Sturge in the *British Medical Journal*. Dr. Barber's patient was seized with intense itching, erythema, and urticaria soon after taking a dose of fifteen grains. The face swelled and the features were obliterated. The symptoms were relieved by an emetic, and after a purge the patient was restored to his usual health. Dr. Whitehouse gave seven grains and a half to a child. Two minutes later there was violent epigastric pain, general urticaria, and loss of consciousness. A seventieth of a grain of atropine was given, and in a few minutes the symptoms had disappeared. Dr. Allen Sturge gave only four grains (twenty-five centigrammes) for the relief of migraine. Five minutes afterwards the "deadly sickness" gave way and an "expanding sensation was felt rising from the stomach upwards. The eyes were suffused, tears began to flow; the breathing became hard and laboured, accompanied by a feeling of suffocation." There was violent cough, profuse perspiration, urticaria on the insides of both thighs, coppery taste, metallic smell, singing in the ears, and the pulse was quick and full. Five hours after the patient was in his normal condition. My case differs from those quoted, in that the eruption, an erythematous rash, was accompanied by little if any itching, and the urticaria so characteristic of medicinal intolerance by idiosyncrasy was entirely absent. There was no diaphoresis. In my patient the tolerance was perfect until she had become saturated with the drug. Beyond the vaso-motor disturbances in the skin and mucous membranes, the most striking point in the case was the existence of so profound a modification in the nervous centres as the symptoms indicated without serious discomfort or uneasiness.

In his second communication on Antipyrin Professor Germain Sée writes in the following terms of the symptoms presented by some of his patients: "Once in twelve or fifteen cases antipyrin produces—but only when it is continued for more than ten or fifteen days, and in large doses, and especially in women—an eruption having the appearance of urticaria, or of a rash upon the hands and the feet, which lasts two or three days and disappears without leaving any trace; it is a medicinal exanthem, like that of quinine." There is a vast difference between this insignificant eruption and the

manifestations described above. And the more I use antipyrin the more I am convinced that in certain cases, particularly in old people and in persons sensitive to the drug, it should be prescribed with the greatest circumspection. It is usual at present to put down all the untoward consequences to the score of adulteration, but this view still remains to be proved. It is, however, certain that alarming symptoms may follow absorption of antipyrin even in small doses, and it also seems likely that these may be relieved by the administration of belladonna, and antagonised where there is real danger by the hypodermic injection of atropine.—*Lancet, Feb.* 25, 1888, *p.* 364.

DISEASES OF THE NERVOUS SYSTEM.

5.—ON THE SIGNIFICANCE AND VALUE OF THE TENDON REFLEX.

By Thomas Buzzard, M.D., F.R.C.P., Physician to the National Hospital for the Paralysed and Epileptic, London.

[Dr. Buzzard's address before the Harveian Society opens with a description of the various methods of eliciting the Knee-Jerk (for which see *Synopsis*), and a short discussion of the anatomical and physiological considerations involved.]

In general terms, absence of knee jerk signifies organic lesion either of muscle, peripheral nerve, or spinal cord in its lumbar enlargement. It may, however, result, though only as a temporary condition, from an epileptic fit, an apoplectic seizure, or the action of certain narcotic agents. As an example of the first cause, pseudo-hypertrophic paralysis—Duchenne's paralysis—may be mentioned. In this the essential lesion is a muscular one, and the nerves and spinal cord are not necessarily diseased. The knee jerk gradually disappears in such cases, and never returns. The plump of vastus internus does not contract when struck by a percussion hammer. The so-called Thomsen's disease is likewise probably a primary affection of the muscular system, but this is not certain. As a rule the knee jerks remain unaltered in this disease, but in one of two cases which have occurred in my practice the knee jerk was entirely absent. Besides these there are certain comparatively rare cases of progressive muscular atrophy in which the lesion is a primary one of the muscular system. It is apt to occur in several members of one family, and is not unfrequently inherited. In such cases the affected muscles lose their faradaic excitability, and the knee jerks are entirely lost.

The knee jerk is almost always lost in peripheral neuritis affecting the lower extremities and after recovery of the patient is regained, although the return is sometimes long delayed. In the great majority of examples of diphtheritic paralysis (which is

probably in most cases of neuritic origin) the knee jerk disappears. to return when the patient gets well. It is curious that it may be present for some time after paralytic symptoms have developed themselves, and its absence may continue for a period after the patient thinks himself entirely recovered. Or the loss may occur very early, and occasionally, be found to be the only symptom of this affection. It is very important to remember that the absence of knee jerk is an almost constant accompaniment of diphtheritic paralysis in at least some part of its course. If this be forgotten, there is likelihood of many examples of this affection being mistaken for tabes, owing to the ataxic gait so frequently observed in diphtheritic paralysis. I have seen this mistake made on several occasions, and considering, too, that the knee jerk may, as I have said, still be absent when the patient has nothing to complain of, it is requisite to bear the fact in mind in testing for the sign, and in cases of doubt to inquire for a history of recent sore throat. The absence of knee jerk may thus give valuable evidence of the character of a preceding throat affection, of which no local trace remains, enabling us to say that it must have been due to diphtheria, and not to an innocent cause. So, also, the absence of knee jerk which characterises alcoholic paralysis has often led to cases of that form of peripheral neuritis being mistaken for examples of tabes dorsalis. The presence of ataxy with absent knee jerk should always suggest inquiry for a history of preceding sore throat or alcoholism (where this is at all likely) ere a diagnosis of posterior sclerosis is concluded.

The knee jerk is very frequently absent in diabetes. The absence may in many cases, I feel sure, be explained by the peripheral neuritis which is apt to occur in the course of this disease. Whether or not this is the only cause I do not know. Absence of the knee jerk may, then, usually be expected with confidence in cases of multiple neuritis, amongst which those due to alcohol form the largest portion. As an exception, however, I have seen it present in a case of alcoholic neuritis, and, indeed, somewhat exaggerated. A few cases also are recorded of its exaggeration in other forms of multiple neuritis. It is difficult to explain this, unless we suppose, as regards alcoholic cases, that it is owing to the circumstance of the inhibitory influence of the cortex cerebri being suspended by reason of the local action of the alcohol upon the intra-cranial centres. The knee jerk may be lost in lead paralysis affecting the lower extremities.

In cases of spinal meningitis affecting the lower part of the spinal cord, the inflammatory products deposited about the roots of the nerves within the spinal canal will interfere with the production of the knee phenomenon. We expect, therefore, to find absence of knee jerk in cases of spinal miningitis involving the anterior or posterior roots, or both. We look for its return eventu-

ally after complete recovery. Dr. Jackson has pointed out that the knee jerk may disappear also in cases diagnosed as cerebral meningitis. This is no doubt due to the fact that in such instances there is very often an extension of the inflammation from the intra-cranial to the spinal cavity. I have lately seen in consultation with Dr. Briggs of Harrow, a rare case of recovery from cerebral meningitis. On my examination nearly two years after the attack the patient's knee jerks were with difficulty elicited until the Jendrassik method was employed, when they appeared distinctly.

In cases where there is inflammation of the sheaths of nerves which constitute the cauda equina the knee jerk is often lost. Such a condition is especially liable to result from rheumatism or syphilis, or in the spread of carcinoma involving sacral and lumbar vertebræ. The knee jerk is lost in the following conditions where they involve the lumbar enlargement of the spinal cord. Amongst the most important acute affections, transverse myelitis, anterior polio-myelitis, compression-myelitis, and softening of the cord. In the chronic may be mentioned, first and most important of all, tabes dorsalis, insular sclerosis, tumour of the cord, and progressive muscular atrophy from chronic polio-myelitis. Where a patient has lost the power of extending the leg upon the thigh, it is evident that, if this be due to organic lesion, it may depend upon disease affecting either the antero-lateral column of the cord, the anterior grey matter of the cord at the point whence the anterior crural nerve is given off, or it may arise from disease of the anterior crural nerve. The knee jerk of itself serves as a test to distinguish the first from the two latter conditions. In the first case it will be found greatly exaggerated, in the latter absent. No donbt we can arrive at the same end by testing electrically the quadriceps extensor group of muscle. In the former case its faradaic excitability will be preserved, in the latter instances either lost or much impaired. The tap upon the tendon gives us the information most readily. But as between the two last lesions the symptom does not help us to distinguish; this must be done by observing whether any sensory phenomena accompany the loss of power, in which case the lesion is not one of the anterior grey matter, or at least not of that alone. The disappearance of the knee jerk, then, along with paralysis and wasting of the quadriceps extensor, but without sensory phenomena, points to anterior polio-myelitis. Its return under observation is of most favourable import, and in a case of infantile paralysis will enable us, I believe, to assure the anxious parents that the child will at all events recover the power of extending his leg. The converse, however, does not necessarily apply. Its continued absence in such a case is not necessarily significant of continued paralysis. The knee jerk is easily lost; a little thing will interrupt it; and we shall often find a recovery of

power which is to all intents and purposes complete, with the knee jerk absent. This is often seen in old cases of infantile paralysis. One on the lower extremities perhaps is manifestly paralysed to a greater or less extent. The other is represented to be perfectly sound. Nevertheless, the knee jerk is also absent on this side. The limb in question has been originally affected along with the other, but has recovered with only this sign remaining of the trouble which it has gone through. Nor will the behaviour of the knee jerk alone distinguish between anterior polio-myelitis and transverse myelitis at the same part of the cord. It will equally be absent in each.

As a grand general rule, in Pott's disease (caries and posterior spinal curvature) the knee jerks are enormously increased, and there is marked ankle clonus. This is because the position of the lesion is comparatively rarely found much below the mid-dorsal region of the spine. The lesion therefore obstructs the controlling influence which should pass down the lateral column, and the reflex activity of the cord is under no restraint. Occasionally, however, it attacks the lowest dorsal vertebræ, and then the lumbar enlargement of the cord will be affected with transverse myelitis at the point of compression. As the site of origin of the patellar tendon phenomenon will probably be involved, the result will be an absence of the knee jerk. So, again, if in a case of paraplegia there is in the first instance a marked increase of knee jerks which in the progress of disease gives place to a more or less total absence of them, it is evidence of extension of a lesion of the spinal cord downwards in the lumbar enlargement. A very strongly marked excess of knee jerk with ankle clonus in a case of paraplegia should always make us instinctively examine the spinal column for Pott's disease. But in view of what I have just said, it is evident that the precaution should not be omitted also when the knee jerk is absent instead of being abnormally lively. The inference is that we ought never to leave this undone. Many cases of Pott's disease are overlooked from neglect of this precaution.

The knee jerk is nearly always absent in tabes dorsalis. Its occasional though rare retention, then usually in an exaggerated form, along with other symptoms which point very strongly to the disease, can be explained by the presence of lateral sclerosis, along with some degeneration of the posterior columns of the cord. I am not aware of having seen the knee jerk restored in a case of tabes, though rare examples of this have been recorded, one notably on the excellent authority of Dr. Gowers; but so very exceptional indeed is this that we are entitled to say that the return of the knee jerk after it has been distinctly absent is almost positive proof that the case in which this occurs is not one of tabes dorsalis.

In the early days of the subject of tendon reflex, the absence of the knee jerk alone used to be not unfrequently considered by some

as evidence of the case being one of tabes. At this time of day it is of course unnecessary to confute this fallacy. What is there, then, specially to be noted in reference to tendon reflex and its behaviour in tabes? It appears to me to be this: The knee jerk is entirely absent. Its absence must depend upon lesion either of the muscle, peripheral nerve, or of the cord itself, at the elevation indicated by anatomical considerations. It is not due to lesion of the peripheral nerve, or we should have sensory phenomena with muscular wasting and altered electrical reaction. But here the muscle is quite healthy. Its tone would appear to be perfect, for it can be powerfully contracted by voluntary influence; and a blow on the muscular fibre (not the tendon) produces well-marked contraction. There are no sensory symptoms referable to the anterior crural nerve. We may therefore discharge the muscle and nerve, as there is no evidence against them. And because the muscle is healthy, we may also pronounce the anterior horn of grey matter innocent. There remain the parts into which the posterior root enters—viz., the posterior horn and the postero-external columns of the cord. Whether disease of the posterior horn by itself will interrupt this reflex or not I am unable to say. There is no observation on record, so far as I am aware, tending to prove it. But as regards the postero-external columns of the cord, which probably consists mainly of a portion of the posterior root of nerve going vertically to the grey matter, the evidence is, I need hardly say, abundant as to sclerosis of this part being capable of destroying the reflex in question. We can therefore by exclusion in such a case as I have supposed run the point of lesion to earth in the postero-external column of the cord—the seat of the essential lesion of tabes dorsalis. It will sometimes happen that a patient who is really affected with tabes dorsalis—unrecognised probably because the ataxic symptom chances to be absent—is said to have suffered from "dreadful sciatica," the prominent symptom in the case being the lightning pains. Examination shows absence of knee jerk. The fact excludes simple sciatica as the cause of the pains, because it is the anterior crural nerve, not the sciatic, which is concerned in the production of knee jerk.

It is right to say that the knee jerk is occasionally lost when there is no reason to suppose lesion of the muscle, nerve, or cord itself at the point anatomically related to this reflex. Its absence has been noted in cases of cerebellar tumour. But they are so very exceptional as to need only the remembrance, not the expectation, of their occurrence. As a grand general rule, absence of knee jerk, when it does not depend upon disease of muscle, points to "spinal" mischief, including under that head the peripheral nerves as well as the spinal cord. In certain acute conditions, again, the knee jerk may be suppressed. Westphal and Gowers have both recorded its temporary absence after a very severe epileptic seizure.

I have on a few occasions confirmed its absence in cases of apoplexy, and the same applies to the wrist jerk. But we are not at present able to derive any certain prognostic data from the presence or absence of knee jerk in severe cases of cerebral hemorrhage.

To return, however, to the spinal cord. The knee jerk in the vast majority of cases is exaggerated, and there is ankle clonus in cases of insular cerebro-spinal sclerosis. But it now and then happens in examples of this disease that it is absent on one or other side, there being at the same time ankle clonus in that limb. This condition, which at first sight appears somewhat paradoxical, is easily explained by remembering that a patch of sclerosis occurring in the lumbar enlargement of the cord at the appropriate level would necessarily, if it involved the anterior grey matter, destroy the reflex, whilst at the same time the patches involving the antero-lateral columns would give rise to ankle clonus, which is dependent upon the functioning of a lower segment of the cord. The existence, then, of ankle clonus whilst the knee jerk of the same side is absent should always lead to an inquiry after confirmatory symptoms of insular sclerosis. Thanks to Dr. Beevor's kindness, I have the opportunity of showing you an example in which this condition obtains, although I am bound to say that by the Jendrassik method a very slight evidence of knee jerk can be sometimes obtained on the left side, from which it is usually apparently absent. Tumour of the cord itself may destroy the knee jerk if it involves the level of the lumbar enlargement anatomically concerned.

In progressive muscular atrophy the behaviour of the knee jerk is not by any means constant. As in the progressive atrophy which originates in the muscular system—the myopathic form—the knee jerks may be expected to be absent when the disease has invaded the quadriceps extensor. But they are often retained, and not infrequently will be found much exaggerated, even though the muscle is greatly reduced in size. This is an indication that along with the atrophy of the large ganglionic cells of the anterior cornu there is at the same time considerable sclerosis of the lateral columns. Dr. Gowers says that he has not yet met with a single case of progressive muscular atrophy of spinal origin in which the pyramidal tracts were unaffected. It is not easy—in fact, I think, it is often impossible—to say, in a given case of progressive muscular atrophy, whether the disease originates in the muscle or in the spinal cord. When, however, along with wasting and changed electrical reaction of the quadriceps muscle there is exaggeration of the knee jerk, we may, for the reasons just stated, be sure that the lesion is a primary one of the cord, and not of the muscle—myelopathic, not myopathic.

I have on many occasions found exaggeration of knee jerk when the quadriceps muscle was not only atrophied and showing reaction

of degeneration, but at the same time was flaccid and wanting in tone, the limb consequently exhibiting no signs of rigidity. Such a condition is doubtless exceptional. More frequently, when the lateral columns are sclerosed, there is more or less rigidity of the limb, although the wasting may be considerable. Increased knee jerk and ankle clonus are phenomena of the same order, and may be classed together. They occur when by some cause or other the controlling influence of the higher centres upon the reflex excitability of the cord is suspended temporarily or permanently. Hughlings Jackson and Beevor pointed out the occurrence of ankle clonus in cases of epileptic seizure, and the phenomenon is very frequently observed. It lasts but a few minutes or seconds, and is apparently due to removal of the controlling influence of the cerebral cortex owing to the exhaustion of the nerve cells, the discharge of which constitutes the epileptic seizure. It is probably by the antero-lateral columns that the controlling influence is excited upon the grey matter of the cord. Disease of these columns, then, may be expected to act in a similar manner to suspended activity in the controlling centre; and this is found to be the case. Descending sclerosis of the pyramidal tract secondary to a gross lesion of the cortex gives rise to increased tendon reflex and ankle clonus in the paralysed limbs. In the chronic spinal disease called spastic paraplegia, there is sclerosis of the antero-lateral column of the cord on each side, with the necessary result that great exaggeration of the tendon reflexes occurs. There is usually some, though a varying, amount of disease of the anterior grey matter of the cord associated with this sclerosis of the white lateral columns, causing a certain amount of muscular atrophy, to be found along with the paralysis and spasticity which characterise the disease, but quite exceptionally the lateral sclerosis exists alone. The prognosis in cases of this kind, whether the atrophy be marked or not, is eminently unfavourable. It is necessary to distinguish from this disease a condition closely resembling it in which the symptoms of lateral sclerosis are not, as in this, of primary origin, but are secondary to a localised myelitis, for in this latter condition recovery not unfrequently takes place. So, again, in the compression-myelitis, which is caused by Pott's disease of the vertebræ, the exaggeration of reflexes accompanying the paralysis is most marked. But, as is well known, these cases are susceptible to a large extent of successful treatment, and along with more or less recovery of voluntary power in the extremities there is diminution in the amount of excessive reflex excitability in the cord. It will happen, for instance, that ankle clonus, which has been a marked phenomenon in an earlier stage, can no longer be induced. The tendon reflexes, however, in these cases do not cease, according to my observation, to show considerable exaggeration long after a fair amount of voluntary power has returned.

We may take it, then, I think, that a persistence of excessive tendon reflex in cases of Pott's disease and of paraplegia secondary to localised myelitis does not, by any means, exclude the prospect of a considerable amount of recovery. So also in the parallel condition which follows an intra-cranial lesion—the excessive knee jerk and ankle clonus occurring a few days after the attack—this is not incompatible with a practically complete recovery of power in the lower extremity. Here, again, a considerable amount of increased tendon reflex will be found to persist after great recovery of power has taken place. As regards the excessive wrist jerk, the case differs. The persistence of this phenomenon is far more often associated with an enduring loss of power in the arm, and I think it may be said that the continuance and increasing prominence of this symptom gives reason to form an unfavourable prognosis in regard to the amount of recovery which may be expected to take place in the arm. But there are exceptions to this rule, and I have several times seen a persistence of an extremely lively wrist jerk along with a recovery of power of using the hand and arm, which left little to be desired.

In conditions of neurasthenia the tendon reflexes are almost always in excess; and in the functional paraplegia which is so common in this obscure condition of the nervous system, and so much resembles the effects of bilateral sclerosis, there is often an extraordinary liveliness of the knee jerk accompanied by ankle clonus. It is remarkable, and, to a certain extent, opposed to the idea that in the tendon phenomenon we have to do with a true reflex, that along with this undue briskness of knee jerk there is very often indeed a total absence of plantar reflex. No movement of the leg muscles occurs when the sole is tickled. So common is this association that I have long been in the habit of urging that in a case of paraplegia without sensory symptoms increased knee jerk with absent plantar reflex should always lead one to suspect a functional condition. It is not conclusive, as in a certain phase of myelitis the same association might be found. Other circumstances, however, and especially sensory and trophic symptoms, would in such a case render confusion impossible. The excess of tendon reflex, which is the rule in neurasthenia, often lends useful aid in the diagnosis of the functional character of certain conditions. A patient, for instance, complains of loss of power in the legs, and asserts that the arms are absolutely normal, and yet we find the same exaggeration of reflex at the wrist as we do at the knee. The inference is that we may, as it were, "discount" the latter, and in practice I have found it safe to do so.

On the other hand, does inequality of tendon reflex on the two sides exclude the diagnosis of functional lesion? This is an important point. I fear that diagnosis cannot receive aid from it. I have seen patients with considerable inequality of tendon reflex

recover their health and strength. But I am certainly disposed to look upon a gradually increasing tendon reflex associated with constantly diminishing power as evidence of organic lesion. A very instructive case was lately in hospital. A woman came in complaining of some loss of power in the right leg. The knee jerks were about equal, and there was nothing whatever objective to throw light on the nature of her affection. She had been exposed to great troubles, and her husband was an epileptic. From these and other circumstances I was at first rather disposed to regard the case as one of functional disorder. But gradually the arm lost power, the wrist jerk and knee jerk of that side became excessive, and long before a post-mortem examination confirmed the opinion a diagnosis of gross intra-cranial disease had been made. The state of reflexes helped us, but was not sufficient of itself to solve the doubt.

To turn for a moment to the converse of this, I am disposed to say that in my experience the knee jerk is never lost in neurasthenia. It is never safe, I am sure, to apply the term "hysterical" or "neurasthenic" to a loss of power in the lower extremities accompanied by loss of knee jerk. Not a few cases of Friedreich's — the congenital form of locomotor ataxy—have been diagnosed as hysterical from failure to note this fact. I examined one such case not long ago, which had been sent to Dr. Playfair to undergo the Weir Mitchell treatment, on the supposition that the condition was hysterical.—*Lancet, Jan.* 28, 1888, *p.* 160.

6.—ON THE EARLY LOSS OF KNEE-JERK IN DIPHTHERIA.

By R. L. MacDonnell, B.A., M.D., Professor of Hygiene in McGill Univ.; Physician to the General Hospital, Montreal.

The object of this paper is two-fold—firstly, to add some evidence in favour of Bernhart's observation (Virchow's *Archiv*, Bd. 99), that loss of knee-jerk may precede the other symptoms, and may even occur without any other indication of nerve implication; and secondly, to show that loss of knee-jerk occurs with the earliest symptoms of the disease itself, and coincident with the very first appearance of the throat affection.

The cases on which the following observations were made, were all hospital patients. To avoid possibility of doubtful diagnosis, all private cases have been excluded from consideration. Each hospital case was seen by medical men besides myself, and was considered of sufficient severity to be placed in the infectious block of the hospital, and these hospital cases were all my own. I did not borrow any from my colleagues. Then, again, of the cases admitted, three of doubtful diagnosis have been excluded. Thus, during the last six months eighteen cases have been under my care. Of these knee-jerk was absent on admission in 10 and present in 8.

Loss of knee-jerk may precede other nervous phenomena, and be the means of enabling a diagnosis to be made of the nature of the previously existing throat affection. Here is an illustration:—A boy, aged fourteen, previously strong and healthy, returned home from the country, where one of his young friends had died of a sore throat. There were at his home four children, three girls and a boy, aged eight to sixteen. On the day of his return the patient looked somewhat anæmic, and complained of feeling weak, owing to the effects of the quinsy he was reported to have had. There was a slight discharge from the nose, but nothing to point to the preëxistence of diphtheria but the absence of knee-reflexes. Isolation was attempted, but too late, and three of the four children took the disease. The patient eventually suffered from very great debility and regurgitation of food, the voice became nasal, and recovery was long delayed. The knee-jerk did not become normal for four months. The sisters went to the hospital, where one died, the other two lost the knee-reflex immediately, and subsequently had diphtheritic paralysis.

Now, here was a case in which loss of knee-jerk enabled a definite opinion to be formed as to the nature of the so-called quinsy. Such knowledge might be put to practical use in the prevention of infection, though it availed little in this particular instance. The cases of the two sisters of this boy show that loss of knee-jerk may not only be the first evidence of diphtheritic paralysis, but that it may continue for a lengthened period as the only evidence of that condition. Both these girls, aged nine and sixteen respectively, took the disease immediately after the return of their brother, and both had very severe attacks of the throat affection. In June last, though both had well recovered, yet in both of them the knee-reflex was absent, no other nervous symptoms being present.

Knee-jerk in many cases of diphtheria is absent from the very first day of the illness.

In ten of the eighteen cases the knee-jerk was absent on the day of admission to hospital. In the family above mentioned the two girls were admitted to hospital as private patients, in both knee-jerk was absent on admission, and in both paralysis occurred to a limited degree, in the elder one, aged sixteen, taking the form of general muscular debility, with regurgitation of food. In the case of a French Canadian boy, of seventeen, admitted March 24, 1887, with severe pharyngeal diphtheria, knee-jerk was absent on admission. The three brothers of this patient had also had diphtheria, and in all three paralysis had occurred. Four months after admission, knee-jerk was still absent, and other paralytic symptoms had made their appearance.

It seems probable that early loss of knee-jerk usually indicates the advent of other paralytic symptoms. Thus, of the ten cases

in which the knee-reflex was absent, two died, four developed nervous symptoms while in hospital, and of the remaining ones no satisfactory report could be obtained of their condition after they had left the hospital. But of the eight patients whose knee-jerk was unaffected, paralysis appeared in one, two died, and of the rest no history could be obtained.

Of the causes of death of the two children with lost knee-jerk, one died from laryngeal implication, for which I opened the trachea, and the other of sudden heart failure at a time when other symptoms were abating, while the deaths amongst those with normal knee-reflex were due in both cases to spread of the false membrane to the larynx. In one of the cases in which there was no loss of knee-jerk at the outset, and in which the growth of false membrane in the pharynx was very extensive, accompanied by very great swelling in the neck, the knee-jerk became lost in the third week of the illness; and at about this time great irregularity of the heart was noticed, and a systolic murmur at the apex was perceptible for some days. Regurgitation of food, loss of accommodation of the eye, and general debility followed. A week ago we were obliged to feed him with the stomach tube, death by starvation threatening on account of the paralysis of deglutition.

In two cases diphtheria was accompanied by a rash, knee-jerk was absent in both, and diphtheritic paralysis appeared in one. Of two children, brother and sister, admitted on the one day, the brother died of severe laryngeal diphtheria, knee-jerk being present, the sister, in whom it was absent, lived several days free from laryngeal symptoms and doing well, but died suddenly of heart failure.

The conclusions, therefore, to which this observation leads us, are as follows:—1. In a considerable number of cases knee-jerk is lost from the first beginning of the disease, and thus affords a valuable means of diagnosis of the nature of the throat affection. 2. The loss of knee-jerk is the first evidence of the disease having attacked the nervous system. 3. Absent knee-jerk has no influence on the prognosis.—*Medical News, Oct.* 15, 1887, *p.* 448.

7.—ON THE LIMITATIONS OF THE SO-CALLED "WEIR-MITCHELL TREATMENT."

By W. S. Playfair, M.D., F.R.C.P., Physician for the Diseases of Women and Children to King's College Hospital, London.

Six years have elapsed since I first introduced to the profession in this country in the pages of the Lancet the systematic method of treating certain grave forms of functional neurosis, generally known as the "Weir-Mitchell treatment." Until the eminent physician whose name is so deservedly associated with this treat-

ment conceived the idea of attacking these hitherto hopeless cases in a regular, systematic, and scientific manner, such neurotic ailments were the despair of the profession, and a curse alike to the patients and to all connected with them. To have devised a means by which, when properly handled, such cases can, in the vast majority of instances, be restored to health was no slight achievement, and I have no hesitation in expressing the opinion that it constitutes the greatest advance of which practical medicine can boast within the last quarter of a century. When my original paper was written there were many members of the profession who were inclined to doubt the statements made in it, and who looked with suspicion on the methods employed as something heterodox, and so different from the old-established mode of medication as to be almost reprehensible. Gradually, however, the incontestable success which followed in well-selected cases, and the striking character of the cures often effected, attracted considerable attention, and the inevitable result followed of this method of treatment being often injudiciously, unnecessarily, and imperfectly carried out. One of the remedial agents employed, up to that time practically unknown in this country, has become so popular that I believe I was fully justified in writing of it as I did lately in a letter on the subject in the Lancet as follows: "No newspaper appears without half a dozen advertisements about massage, schools for massage have been started, every hospital has one or two nurses or sisters who practise it, and massage threatens to become the prevailing medical fashion, if not the prevailing medical folly, of the day." I have, of course, no means of knowing to what extent massage is prescribed by the medical profession generally, or in what cases it is used. It is absolutely certain that it must have received an extended application in a vast number of cases other than those in which I at first employed it, for it is quite astonishing to see the number of women who are seeking to earn a livelihood by practising it. I hear of them in shoals, and such a supply seems to indicate a great demand. From many sources and in various ways, I come across histories of cases subjected to this treatment which were manifestly quite unsuited for it, and in which nothing but failure and disappointment could possibly result; or I hear of it being carried out in a way in which it could not possibly succeed. The result is that a treatment, good and even admirable in properly selected cases, gets discredited. In consequence of the attention I have paid to this subject I have had opportunities of studying it pretty fully, and I may claim to have acquired a large experience with it. I trust, therefore, I may not be considered presumptuous if I now draw the attention of the profession to the limitations of this method of treatment, and to the precautions which should be taken in the selection of cases in which it should be applied. From what I have said above, and from the number of cases in

which I am asked to advise, in which it is absolutely inapplicable, I feel convinced that a word of warning is not likely to be untimely.

1. I would lay down the rule, subject possibly to a few rare exceptions, that it is unsuited to any form of organic disease. It is especially in some obscure forms of organic disease of the spinal cord that the mistake is most often made of resorting to it. I have seen, not one, but many cases, of well-marked locomotor ataxy, or of sclerosis, in which it has been prescribed. This, of course, implies a gross error of diagnosis, but none the less is it a deplorable thing that patients should be subjected to the expense and disappointment entailed on them by such a mistake. But short of errors of this kind, which should not have been made, there are a large number of cases of obscure spinal disease in which the diagnosis is a matter of supreme difficulty. No one can be more convinced of this fact than myself. I have seen many cases in which I have found it quite impossible to come to a conclusion myself, and in which I have had the advantage of the opinion of some of our most eminent neurologists, some of whom have pronounced a given case organic, others functional. Again, I think there is good ground for believing that a disease originally purely functional, and which doubtless might have been cured if treated in its inception, may eventually have engrafted on it certain structural changes in the nerve centres controlling locomotion, which render permanent and complete cure impossible. So far, therefore, am I from considering mistakes in the selection of cases simulating certain forms of nerve disease reprehensible, that I believe them to be occasionally absolutely unavoidable. I would even go further and express the opinion that there are some obscure cases the nature of which can only be cleared up by the test of treatment. If they are functional, systematic treatment, properly applied, will cure them; if they are organic, it will not. No doubt this is a comfortable doctrine and a nice way of excusing failure, but nevertheless I believe it to be a true one. From what I have said, however, the necessity of extreme care in diagnosing this class of case will be apparent; and, indeed, it involves a knowledge of the most advanced kind in modern neurological medicine, which few of us can boast of possessing. For myself, so convinced am I of this difficulty, that I make it a rule never to undertake a case of this sort about which I have the least doubt until I have had my own experience fortified by the judgment of some expert in this class of disease, and I have often had to congratulate myself on insisting on this precaution.

2. Care should be taken never to apply this treatment to any marked case of mental disease. I believe errors in this direction are far from uncommon. If I may judge from my own experience this method of treatment has often been attempted in cases of pro-

nounced melancholia and other types of chronic insanity, in which it cannot possibly do any good, and in which it may do much harm. Strong pressure is often applied by relatives and friends to have a case pronounced "hysterical," because they cannot bring themselves to face the fact that it is mental. I have been asked my opinion on many cases of this kind, in which the friends have strongly urged me to treat the case. I admit that it is very often extremely difficult to make the distinction. In one sense all marked cases of hysteria are mental, and they are often very closely allied to insanity. If the family history of any case of marked hysteria is analysed, it will generally be found that there is a tendency to neurotic disease running through it, and that even pronounced insanity may exist in some members of it. Of the close relationship of hysteria of a certain kind to insanity I have seen several curious and instructive examples. Two or three years ago a young lady was sent to me as a bedridden hysteric, and her case seemed in every way an excellent one for treatment. In due course of time she was quite cured, and her recovery was justly considered a remarkable one. From having been confined entirely to her bed or sofa for years, she became strong, active, and energetic, and entered into all the duties and pleasures of society. A year later she wrote me a letter, telling me how well she was, and as a proof she mentioned that she had been out with the hounds on the day she wrote, having been many hours in the saddle. The next morning she committed suicide in her bedroom. In another instance I cured a similar bedridden case, which was marked by the most extreme hysterical apepsia and emaciation. She made a perfect recovery, and for two years remained in robust health. During her illness and treatment she never exhibited the faintest symptom of mental disease. At the end of two years she suddenly, and without any premonitory symptoms, developed an attack of acute mania, and had to be placed under certificates. From this she has now recovered, and is, to all appearance, perfectly well. Most unquestionably there are a large number of what may be called borderland cases, who are what is vulgarly called "a little cracky." who may by a judicious course of treatment, be drawn away from the edge of the precipice along which they are walking. The improved nutrition, and restored general health resulting from it, inclines the balance in the direction of improved mental as well as of improved bodily health, and the cure may be permanent. The selection of such cases for treatment must, however, always be a matter of great difficulty, and requires much judgment and experience; and I have no doubt that the rule I have indicated is the correct one, and that systematic treatment should not be attempted when any definite sign of mental disease exists. I am quite sure that the only failures and disappointments I have met with, and they are not many, have been in

doubtful cases in which I have been persuaded to attempt a cure in spite of my own better judgment.

3. I would strongly urge everyone contemplating the treatment of a case in this way either to do it thoroughly and well, or not to do it at all. This is a rule I have insisted on elsewhere, and on the importance of which it is impossible to exaggerate. It is disheartening to see the number of cases I come across admirably adapted for systematic treatment, in which success was as nearly certain as nearly certain as anything could be, which have been spoiled because the practitioner tries it "in a modified way," the modification generally consisting in treating the patient in her own house, or in admitting the visits of friends, or in allowing the patient to get up and go out during treatment, or some other way of trying to perform "Hamlet," with the part of Hamlet left ont—a performance proverbially known to be unsuccessful. No doubt the difficulty and expense of carrying out systematic treatment thoroughly are so great that there is a strong temptation to adopt some of the "modifications" alluded to, but I can only repeat that increasing experience confirms me in the opinion that thoroughness and completeness are absolutely essential, and should be considered a *sine quâ non.* If they are neglected, failure may most certainly be predicated.—*Lancet, Jan.* 7, 1888, *p.* 8.

8.—ON THE SPASTIC PALSIES OF CHILDREN.

By E. Mansel Sympson, M.A., M.B. Cantab.

[After giving the narrative of eight cases, the majority of which were observed at St. Bartholomew's Hospital, Mr. Sympson proceeds to consider the Pathological Anatomy of the subject.]

The essential lesion in these cases of spastic biplegia or hemiplegia (and possibly in spastic paraplegia of children) is most probably in the cerebral cortex. In Dr. Gee's case (reported by Dr. Norman Moore, *Bartholomew's Hospital Reports*, vol. xv. p. 65. See also vol. xiii. p. 71, and vol. xvi. p. 27) of spastic biplegia there was a large area of *sclerosed* cortex extending from the middle line along each fissure of Rolando. Again, in a case of Dr. Ross's (*Diseases of the Nervous System*, vol. ii. pp. 486, 487), a child of 3 had suffered since she was three months old from spastic biplegia. Post-mortem, there was found a sulcus on each hemisphere, occupying the place of Rolando's fissure. In its microscopical characters, this portion of the cortex exactly resembled an embryonic brain, and was in fact an example of *local arrest of development.* A case of Dr. McNutt's (see an admirable paper in *American Journal of Med. Sciences*, Jan. 1885), also of spastic biplegia, showed somewhat different microscopical features. In both hemispheres there was atrophy of the ascending frontal, ascending parietal, and paracentral convolutions. In this atrophied portion of

the cortex there was sclerosed tissue, rich in *corpora amylacea* and round cells. As the palsy came on within a few days of birth and the labour was hard and long, it seems most probable that the atrophy was the result of injury during parturition, probably *meningeal hemorrhage.* But none of these cases had athetosis. That, however, according to Dr. Gowers (*Diseases of the Brain*, p. 61), in children does not seem to be related to any special seat; it follows disease anywhere in the motor regions of the hemisphere. (Cf. Dr. Beach's case *Brit. Med. Journal* for 1880, vol. i., p. 882, quoted by Dr. Ross.)

Of the *congenital forms* there are two classes: (1) those in infants injured before birth; (2) those in infants damaged in the act of coming into the world. As an instance of the former, Dr. Gibbs' case (*Trans. Obstetrical Society*, 1862,) will serve. A woman (who had had a blow on the abdomen three months previously) was delivered of a still-born child. His left fingers, toes, elbow, and knee were firmly flexed, and the remnants of an old clot were found in the right hemisphere. Now, meningeal hemorrhage, subdural or intra-meningeal, is the commonest form of cerebral hemorrhage in infants. (Ziegler's *Special Pathological Anatomy*, sect. ix.-xii., by Dr. MacAlister, p. 267.) Another case of Dr. McNutt's will serve as a specimen, and it belongs also to the second class of congenital palsies. A child asphyxiated when delivered was resuscitated, and palsy of its right arm was noted. It was comatose for its six days of life, and post-mortem there was found a clot over the posterior surface of the left hemisphere. Dr. Little (*Obstetrical Trans.*, 1862) has recorded many cases of hemorrhage in still-born children. Slighter hemorrhage might not be fatal, but would produce palsy, which would afterwards become spastic. Probably congenital athetosis is due to a previous palsy of this kind, though other causes might be arrest or want of development. In the *acquired forms*, hemorrhage is rarer, though of spastic palsy occurring after measles it is the most likely cause. Dr. Gowers (*Diseases of the Brain*, pp. 194, 195) suggests thrombosis of a cortical vein as probable, especially after wasting diseases such as *diarrhœa infantum.* Dr. Gee assigns some of these cases to a chronic meningitis. Among those due to this cause, infantile spastic paraplegia has been placed, on the ground that meningeal hemorrhage in children shows a tendency to be more extensive nearer the middle line, that it generally begins from the middle line, and spreads downwards along the fissure of Rolando. Thus in one of the cases recorded (*Case* 2) the leg was affected first, then the arm. And symmetrical cerebral hemorrhages are not uncommon. Moreover it may not be too fanciful to imagine that in infantile spastic paraplegia a double hemorrhage occurs, one on each side of the middle line, so as to involve the leg-centre only. Let us apply these remarks to the particular cases described. In

Case 1, a hemorrhage occurring during delivery over both hemispheres would most satisfactorily explain the spasm in all four extremities. There was no suspicion of congenital syphilis about the child, though it did improve under small doses of mercury. *Case* 2 had had measles; this is supposed to exert some injurious influence on the walls of the blood-vessels, and so predispose to hemorrhage. Or it may be a case of Dr. Gowers' thrombosis of a cortical vein. But a lesion which tends downwards and outwards from the middle line is much more likely to be hemorrhage than a venous thrombosis, which would naturally spread into the longitudinal sinus, *i.e.* in the opposite direction. A cortical lesion around the right fissure of Rolando would explain *Case* 3, though there is more evidence—the general convulsions, &c.—for venous thrombosis and a secondary softening.

In *Cases* 4 and 5 the history is not very satisfactory; there was almost certainly lateral sclerosis in both cases, the result perhaps of a meningeal hemorrhage before or during birth. *Case* 6, from the semi-comatose state early in life, the hemiplegia and athetosis coming on thereafter, falls in admirably with Dr. Gowers' description of the usual consequences of venous thrombosis of the cerebral cortex. Owing to the age of *Case* 7, his early history is not all that might be desired; it is most probably one of congenital spastic biplegia, incomplete on the right side of the brain, where the hemorrhage (if the lesion were due to that) only overspread the leg-centre; while on the left side it involved those for the leg and arm, and partially that for the face. *Case* 8 is very similar to *Case* 6, an instance of infantile spastic hemiplegia, explainable as a result of venous thrombosis and softening thereafter, or of a chronic meningitis. The spreading of the affection to the other side so long after the initial lesion is curious, and lends some support to the latter theory.—*Practitioner, Feb.* 1888, *p.* 92.

9.—ON THE OCCURRENCE OF HEMIPLEGIA AND HEMI-EPILEPSY IN RENAL DISEASES.

By the Editor of the Medical News.

The clinical maxim formerly accepted by all and often invoked in cases of doubtful diagnosis, that limited palsies and circumscribed convulsions do not occur in cerebral uræmia, is subject to exceptions that have recently rapidly increased in number.

In addition to the cases of so-called uræmic hemiplegia recorded by Carpenter, Pätsch, and Jäckel, Raymond has recently collected six instances of interstitial nephritis, in aged persons, in which apoplexy, hemiplegia, or partial convulsions occurred without any other discernible cerebral lesion at the necropsy than atheroma of the arteries and a more or less prominent œdema. Almost at the same time Chantemesse and Tenneson published a paper based

upon the analysis of five cases of diffuse nephritis in which analogous nervous phenomena had occurred. A little later (*Gazette Médical de Paris*, Nov., 1886) Florand and Canniot published two cases of the same kind observed in the service of Raymond. Within a few weeks F. X. Dercum has reported two cases of this kind at a meeting of the Neurological Society of Philadelphia, which were published in these columns. Not all these cases are of equal value. Several of them are too complex, too obscure to be looked upon as possessing value as proof of the causal relationship between uræmia and these accidents of cerebral origin. But the fact stands that in uræmia, or, to speak more precisely, in renal disease, both localised paralyses of hemiplegic character and circumscribed epileptiform attacks are met with in the absence of any gross lesion of the encephalon.

These various phenomena are encountered in sub-acute and acute nephritis; especially may we look for them in chronic interstitial nephritis. The stage of the disease is usually an advanced one, in which uræmic manifestations have already made their appearance; but they have also occurred at a time when no other symptom characteristic of uræmic intoxication had yet shown itself. In some instances they have been preceded or followed by marked stupor or coma; yet again they have suddenly appeared without prodromes and unaccompanied by any other symptoms of cerebral disturbance.

Complete or incomplete motor hemiplegia limited to the extremities, or invading the face, may persist without perceptible alteration till death, or it may gradually improve, sometimes finally to disappear, sometimes to recur at a later period. The latter cases resemble the hemiplegia due to cortical softening from thrombosis. The motor hemiplegia is often associated with a hemianæsthesia, usually of less degree, but likewise variable and liable to the same fluctuations. Chantemesse and Tenneson noted in two cases conjugate deviation of the face and eyes. The partial epilepsy observed in these cases presents the well-known traits of Jacksonian epilepsy. Sometimes it is to be noted that the attack alternates, predominating now on one side, now on the other.

It is a remarkable fact, especially in view of the presumed dependence of these accidents upon uræmia, that there has been observed in a number of cases a high degree of fever. In one instance the temperature just before death reached 105·8° F.

Beyond the variability of the symptoms and the presence of albuminuria, there is nothing at all in the clinical aspect of certain of these cases to warrant us in attributing them to uræmia. Even the presence of albumen in the urine has only a relative value, in view of the fact that albuminuria is by no means rare in advanced senile atheroma. The difficulties of diagnosis are enhanced in cases of latent interstitial nephritis. The clinical picture is that of

local cerebral softening, especially in an aged person with atheromatous arteries. At the necropsy no cerebral gross lesion is found, but the arteries are atheromatous and there is œdematous swelling of the cerebral cortex varying in degree and extent.

What the pathology of these paralyses and localised convulsions may be it is difficult to say. The greater number of authorities attribute them to cerebral œdema of uræmic origin. Others invoke disturbances of the encephalic circulation due to alterations of the lumen of atheromatous arteries and pressure upon vessels. These explanations will scarcely serve. They are too general. Moreover, in many of the cases no mention is made of cerebral œdema, and in those in which its presence is recorded, it is described as a diffuse general condition to which alone hemiplegic phenomena cannot well be satisfactorily ascribed. Must we then, with Chauffard, invoke a uræmic intoxication capable of directly influencing or destroying the functions of the cerebral cells?

This view must be accepted in explanation of certain of the cases. It will not, however, serve for those in which the cerebral manifestations are unattended by uræmic symptoms of any kind; in which they happen in an individual subject, it is true, to chronic nephritis, but in no sense uræmic.

If, then, the semeiology of the cerebral accidents of patients suffering from disease of the kidneys is as yet only roughly sketched out, their pathology remains altogether obscure. The clinical facts are, however, established upon a firm basis, and it may even be questioned whether or not many attacks of hemiplegia and localised convulsions attributed in the absence of post-mortem examination, to local brain lesions, may not have been of this nature. L. Dreyfus-Brisac (*Gazette Hebdomadaire*, Oct. 7, 1887) has in two cases of hemiplegia attributed to nephritis, observed the disappearance of the manifestations of cerebral lesions coincidently with improvement, under an appropriate régime, in respect of the albuminuria, the digestive troubles, and the dropsy. —*Medical News, Dec.* 17, 1887, *p.* 716.

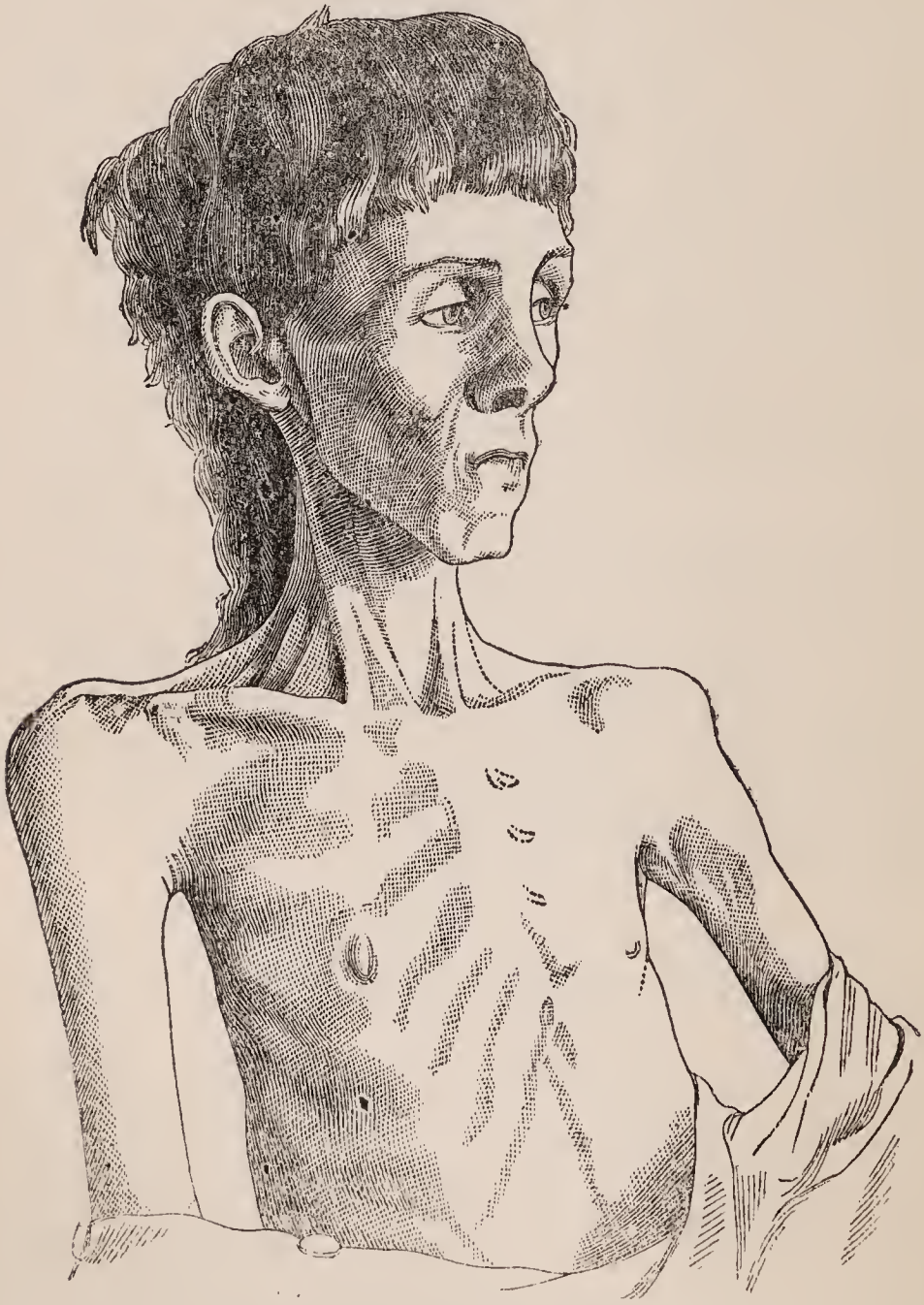
10.—CASE OF ANOREXIA NERVOSA.

By Sir William Gull, Bart., M.D., F.R.S., Consulting Physician to Guy's Hospital, London.

It may be of interest to look at the accompanying wood engravings, which were made from photographs of a case of extreme starvation (anorexia nervosa) which was brought to me on April 20th of last year by Dr. Leachman, of Petersfield. Dr. Leachman was good enough subsequently to send me the following notes; and afterwards, at my request, the two photographs, taken by Mr. C. S. Ticehurst, of Petersfield. The case was so extreme that, had it not been photographed and accurately engraved, some

assurance would have been necessary that the appearances were not exaggerated, or even caricatured, which they were not.

Miss K. R——, aged fourteen, the third child in a family of six, one of whom died in infancy. Father died, aged sixty-eight, of pneumonic phthisis. Mother living, and in good health. Has a sister the subject of various nervous symptoms, and a nephew epileptic. With these exceptions, there have been no other neurotic cases on either side in the family, which is a large one. The patient, who was a plump, healthy girl until the beginning of



Photographed April 21st, 1887.

last year (1887), began, early in February, without apparent cause, to evince a repugnance to food; and soon afterwards declined to take any whatever, except half a cup of tea or coffee. On March 13th she travelled from the north of England, and visited me on April 20th. She was then extremely emaciated, and persisted in walking through the streets to my house, though an object of remark to the passers-by. Extremities blue and cold. Examination showed no organic disease. Respiration 12 to 14; pulse 46; temperature 97°. Urine normal. Weight 4 stone 7 lb.; height 5 ft. 4 in. Patient expressed herself as quite well. A nurse was obtained from Guy's, and light food ordered every few hours. In six weeks Dr. Leachman reported her condition to be fairly good; and on July 27th the mother wrote:—"K—— is nearly well. I have no trouble now about her eating. Nurse has been away three weeks."

This story, in fine, is an illustration of most of these cases, perversions of the "ego" being the cause and determining the course of the malady. As part of the pathological history, it is curious to note, as I did in my first paper, the persistent wish to be on the move, though the emaciation was so great and the nutritive functions at an extreme ebb. —*Lancet*, *March* 17, 1888, *p.* 516.

Photographed June 14th, 1887.

11.—ON THE TREATMENT OF THE PAROXYSM OF MIGRAINE BY ACIDS.

By A. Haig, M.B. (Oxon.), M.R.C.P., Assistant Physician to the Metropolitan Free Hospital, London.

In a paper read at the Royal Medical and Chirurgical Society in May, 1887, and published in the *Transactions* (vol. lxx), I showed that a certain form of headache was closely connected in time with a large excretion of uric acid; and in a subsequent paper in the Journal of Physiology, Vol. viii., Nos. 3 and 4, I showed that within certain limits it was possible to diminish almost at pleasure the excretion of uric acid by giving acids, or to increase it at pleasure by giving alkalies; and further, in a recent paper for the Bartholomew's Hospital Reports, I have given notes of some cases of the above headache which had come under my notice, calling it "the uric acid headache," with the object of drawing attention to the extremely important part which uric acid plays, as I believe in its causation; but I may say at once that I have very little doubt, and those who read my cases in the Reports will, I think, agree with me that this headache is really a member of the class commonly known as "migraine or sick headache."

My object here is not to discuss the many interesting points in the etiology and pathology of this headache and its related diseases, but to point out as quickly as possible a mode of treatment of the paroxysms, which is the direct outcome of my uric acid investigations, especially those in the Journal of Physiology, and which has met with such complete success in my own hands that I am anxious that it should be tried by others on a larger scale.

It will be seen that I have shown in the above papers that, during this headache, uric acid is excreted in excess in the urine, and probably also exists in excess in the blood, and further that it is quite possible to stop this excess in the urine, and also I believe in the blood, by means of acids, and it is to this treatment of the headache paroxysm by acids that I now wish to draw attention.

The acid used is not of much consequence; citric or nitro-hydrochloric are equally good; the only point is that the dose must be sufficiently large, especially if, as is often the case, the headache is going on during the "alkaline tide" of digestion. A dose I commonly find successful is forty to sixty minims of dilute nitro-hydrochloric acid in a tumbler of water, one half to be taken at once, and the rest in thirty or forty minutes; the headache is generally much better within an hour, and quite gone within an hour and a half from the first dose. If the urine is alkaline, or very slightly acid before this treatment is begun, or if the patient has previously been taking alkalies, a third dose of twenty minims of the acid may be necessary; but I rarely have to go beyond one drachm of nitro-hydrochloric acid, and I have given some notes in the Journal of

Physiology of the effects of such a dose on the uric acid excretion. An equivalent dose of citric acid, taken as strong lemonade, will do as well, or, so far as I know, of any acid that may be preferred, provided it raises the acidity of the urine. It is also possible to reverse the process, and by giving alkalies, to bring the headache on or increase it.

The above refers entirely to the treatment of the paroxysm; a diet without butcher's meat, beer, wine, etc., is as I have said in previous papers (Practitioner, August, 1884, and March, 1886) the best preventive treatment.

If acids, properly and carefully given as above, completely fail to relieve, the headache is not migraine, or at least not migraine due to uric acid; and if the urine be tested in the way I have described, probably no uric acid rise will be found corresponding to the headache.

A large number of drugs reported to be useful in migraine really act as acids, increasing the acidity of the urine and diminishing the excretion of uric acid. Some others probably act like the bromides by quieting the nerve centres, and preventing their reacting to the irritant in the blood; but as compared with bromides, the treatment by acids is more satisfactory in that it removes the irritant from the blood, and leaves the nerve centres intact for other processes.—*British Medical Journal, Jan.* 14, 1888, *p.* 73.

12.—A NOTE ON THE TREATMENT OF MIGRAINE BY ANTIPYRIN.

By T. J. Bokenham, L.S.A., St. Bartholomew's Hospital.

Antipyrin has for the past few months attracted considerable attention in Germany on account of its astonishing action on the paroxysms of migraine. In England, however, until quite recently, the drug does not appear to have been much used in this disease. When it has been tried at all, the doses given have been large, and have in some instances been found to produce unpleasant effects. During the last two months I have had an opportunity of treating as many as twenty-six cases of migraine with antipyrin. The results have been in every case perfectly satisfactory, although the dose given has been quite small, in no case exceeding four grains.

It will not be necessary to detail fully each of the cases, as they all resemble one another very closely in their main features. I will only describe three typical cases: namely, that of a near relative; that of a girl, members of whose family exhibit epileptic tendencies; and an attack as occurring in myself.

My own migraine is usually brought on by over-use of the eyes, and is almost invariably preceded by well-marked teichopsia,

which lasts for from half-an-hour to several hours. As the attack proceeds, I get a tender spot on some part of the scalp, generally on the right parietal region, a vascular disturbance, with throbbing behind the right eye. The first time I took antipyrin it was in a dose of three grains after the pain was well developed. In a very short time the throbbing entirely ceased, leaving only a dull aching pain behind the eye; the flushing of the face also diminished. After half-an-hour I took a second dose of three grains, and by the end of an hour from the time of taking the first dose was quite well, save for slight tenderness of the scalp. Since then I have tried the drug, in the same dose, taking it immediately the teichopsia comes on, with complete success in altogether preventing the attack.

The second case is that of a lady who has been subject to attacks of migraine for many years. The starting point of her attacks is also in the eyes. For a long time large doses of ammonium bromide were successful in cutting short the attacks, but recently this drug seems to have lost most of its power. Antipyrin entirely relieved the prostration and pain after the second dose of three grains.

The third case is interesting in that it points to another class of cases in which antipyrin may be of use, namely epilepsy. Here the mother is epileptic, the father is of a very excitable temperament, and another member of the family shows signs of weak intellect. In this case migraine usually follows any undue fatigue, and is attended with a good deal of prostration. I happened to be with her during one attack and promptly administered antipyrin. The headache yielded entirely after the second dose of four grains.

I have under observation also two epileptics, in whom the fits are preceded by a well-marked aura in the shape of tingling of the extremities of the fingers. They are directed to take, immediately they feel this sensation, ten grains of antipyrin in a little water. If the theory of Dr. Liveing concerning the close pathological relation between migraine and the other so-called paroxysmal neuroses be true, there is some hope that in both these diseases we may be able to check or to cut short the attack by the timely use of antipyrin. I have not yet had the opportunity of observing the effect on these two epileptics, but it would certainly seem to be worth a trial.

In conclusion, I beg to point out again that the plan I have pursued with so much success in this series of cases is to give very small doses, contrary to the practice of most physicians, who have used as much as fifteen grains repeated every twenty minutes. I feel sure that antipyrin requires only to be known to become a regular remedy in the treatment of migraine, and that practitioners will use the small dose with less hesitation than they would the large ones previously given.—*Practitioner, Feb.*, 1888, *p.* 99.

DISEASES OF THE ORGANS OF CIRCULATION.

13.—ON THE TREATMENT OF AORTIC DISEASE.

By A. Ernest Sansom, M.D., F.R.C.P., Physician to the London Hospital ; Hon. Fellow of King's College, Lond.

[Dr. Sansom's remarks upon the treatment of his third and fourth varieties of aortic disease, and also his many interesting narratives of cases and illustrative sphygmograms are here omitted.]

The classification of the forms of aortic disease which I propose is (1) Rheumatic, (2) Atheromatous, (3) Traumatic, and (4) Septic or Ulcerative. Of these classes the first two comprise the largest number of cases, so that in most instances the first question which presents itself is whether a patient manifesting the physical signs of aortic obstruction or regurgitation shall be placed in the *rheumatic* or the *atheromatous* division.

I think we may divide, for practical purposes of therapeutics, those patients who consult us for aortic valvular disease which we consider to be distinctly referable to rheumatism into two categories. In the one there are no symptoms referred to the heart and circulation; in the other there *are* such symptoms. It is not very uncommon for a lad or young man to come to us for an affection in no direct way suggesting disturbance of the organs of circulation, and yet for there to be manifest disease at the aortic outlet, obstructive, regurgitant, or both combined. In the case of a young person, even though there be no history of anterior rheumatism, it is almost safe to conclude that any change, whether of obstruction or regurgitation, at the aortic orifice is due to a rheumatic endocarditis, past or present.

In such a case, I think we may say with confidence that all forms of heart tonics, all drugs whose action it is to enhance the force of ventricular systole, are positively hurtful. It may be well at some periods to regulate the digestive powers, and perhaps to administer such general tonics as iron, strychnia, or arsenic, but any agent which alters the rhythm of the heart should be withheld. The danger in these cases is a new manifestation of the rheumatic process, with attendant endocarditis, and the importance of preventive measures *quâ* rheumatism should be indicated.

In the greater proportion of our cases, however, of aortic valvular disease of rheumatic origin, there are symptoms which we can refer to some error of compensation—some want of adaptation to the altered physical conditions. We may ask what these signs are. In a large majority of the cases of aortic disease caused by rheumatic endocarditis, the mitral valve is also involved; there is most commonly an accompanying mitral regurgitation, but in some there is no evidence of anything except the aortic lesion. We may inquire whether these differ in their signs and symptoms from those

in which the mitral lesion is manifest. I think we may conclude that in the most common cases of mitral regurgitation the failure of the heart power is manifested by a fairly definite train of symptoms—dyspnœa occurring as an early symptom and increasing in severity as time goes on, œdema appearing and gradually advancing,—but pain at heart, in my experience, though it may exist, is not a very marked and notable, and not a very early symptom. On the other hand, I have found that in the rheumatic cases in which the aortic orifice is involved, whilst there is no evidence of structural imperfection of the mitral, pain and distress directly referred to the heart are marked and notable symptoms. This pain, in some cases, graduates through many stages to a nearly constant condition of extreme distress; in others it is variable, occurring as a spasm, associated in some cases with faintness, in others with palpitation, and in rare cases presenting the character of angina. It is considered by many that signs of angina are more frequent in cases of aortic disease associated with atheroma, but I have seen some cases in distinct relation with the rheumatic forms of aortic disease.

It is in the rheumatic rather than the atheromatous forms that we find examples of very free regurgitation. It would seem that in many cases the fibrous change following the exudation and cellular infiltration of rheumatic endocarditis in the valve and its neighbourhood is brought about too rapidly for compensatory hypertrophy to occur *pari passu*. It is scarcely important, I think, to debate whether in case of such imperfection of the valve hypertrophy of the ventricle precedes dilatation or *vice versâ*. It appears to me most probable that this is a question of nutrition—if the nutritive needs of the ventricle are adequately supplied so that the increased intra-ventricular pressure can be antagonised, then hypertrophy, if not, then dilatation. In a large proportion of the cases, when the storm of endocarditis which has induced disease at the aortic outlet has apparently subsided, there are some signs of trouble as regards the heart or circulation. Probably our first impulse is to aid the ventricles by administering digitalis or some other cardiac tonic. Observers seem to be much divided on the question whether or not it is advisable to administer digitalis in cases manifesting aortic regurgitation. On this point I have the following observations to offer:—

1. It has appeared to me that in some cases of aortic disease associated with rheumatism digitalis has positively increased the distresses and the dangers of the patient. For instance, in a case manifesting a systolic and diastolic murmur at the base, with systolic murmur at the apex and signs of considerable cardiac hypertrophy, but evidence of ill compensation afforded by the gradual on-come of œdema and dyspnœa, the temperature being then slightly subnormal, four minims (only) of tincture of digitalis

were given in the ordinary diuretic mixture three times a day. The following day there were frequent attacks of urgent orthopnœa, intense anxiety, sweating, and pain at the heart of the character of angina. I was so convinced that in this case digitalis was likely to act as "the opium of the heart" and to allay the symptoms, that I tried the subcutaneous injection of one-fiftieth of a grain of digitaline. I soon found that the drug aggravated the distress; improvement followed the administration of five-minim doses of tincture of aconite and the occasional inhalation of nitrite of amyl. In another case, in which there were signs, in addition to those in the former case, of tricuspid regurgitation, no digitalis, but five-minim doses of tincture of aconite were ordered. The pulse-rate was then 140. Three doses were given during the night, and then it fell to 132, afterwards to 128, and in the morning it was 88 and the patient much relieved.

2. A second objection which may be urged against digitalis in rheumatic aortic disease, from the experience of my cases, is that in a few instances, though there may be no manifestly adverse signs to its employment from its action on the heart, it nevertheless causes sickness, and the patient is intolerant of it. In the case of a boy of twelve, in whom this occurred, convallaria was substituted, and the boy manifested great improvement in all ways.

3. A third objection which may be brought as an indictment against digitalis—and the validity of this may not be so susceptible of direct proof—is that, though no evidence of any immediately baneful effects of the drug is forthcoming, death has occurred in such manner as to give rise to the opinion that there may be some relation between the administration of the drug and the fatal termination of the case. I was led to think this possible many years ago, when a patient of mine at the Royal Chest Hospital, City-road, London, with aortic regurgitation, who had greatly improved under a course of digitalis whilst an in-patient, and was permitted to continue the course as an out-patient, died suddenly in the street. Of course it is acknowledged that in this form of cardiac disease sudden death not unfrequently occurs. But why should this be when there are manifest signs of improvement? I think the physiological action of digitalis affords a sufficient explanation. The slowing of the heart, the elongation of the diastolic period, salutary within certain limits, becomes baneful when these limits are overstepped. Then the individual through the imperfectly closed aortic orifice bleeds into his own left ventricle; and if he happen to be in the erect position the encephalon suffers in the greatest degree from this abstraction of blood. Thus ensues syncope, and the syncope may be fatal. My own opinion is that there is some validity to the objection urged against the employment of digitalis in aortic regurgitation when such regurgitation is considerable, even though there may be for a long period signs of im-

provement under its use. I think the proposition should be strongly enforced that it is undesirable for a patient with aortic regurgitation, when such exists in considerable degree, to continue to take digitalis without medical supervision for long periods. The course that is legitimate enough in cases of mitral regurgitation is to be deprecated in those of aortic regurgitation.

From the foregoing considerations, therefore, I must conclude that in certain cases of the affection we are now considering digitalis is positively hurtful. We may next inquire whether any other agents having a tonic effect upon the heart fibre may be with advantage substituted for it. I have already quoted an instance in which convallaria advantageously replaced digitalis; in others temporary relief has followed the administration of caffeine. I do not propose to consider the evidence concerning strophanthus, which may prove valuable, because I consider my data as insufficient. I shall further consider the effects of caffeine and convallaria when we come to consider the cases of aortic disease caused by atheroma.

It is appropriate now to turn our attention to a section of the rheumatic cases in which, though no adverse signs as regards the action of the special cardiac tonics employed have been manifested, all has appeared unavailing, and there has been a steady advance of the cardiac trouble without any evidence of good results from *any* of the agents employed. This has happened in a few instances, and it behoves us to investigate the cause. It seems to me most probable that there is in some cases initiated by rheumatism a very protracted course of endocarditis, and that with this the cardiac muscle is impaired, for I am convinced that in the path of the endocardial inflammation there is a widely spread involvement of the muscular fibrillæ and the surrounding structures, which are infiltrated with cellular elements. The muscle cannot respond to the influence which under normal conditions stimulates its energy of contraction. Of course the question occurs, in such a case what can we do? The first portion of the answer to this question is, I think, to treat with rest and care the slight manifestations of the anterior rheumatism. In a young subject manifesting some pyrexia with pains in the joints, even though these be very slightly marked, anæmia, and especially quick pulse with irritability of heart, one should enforce the importance of rest. I cannot resist the conclusion that the treatment by salicin or the salicylates, which so wide an experience demonstrates to contribute to the comfort of the patient in acute rheumatism, tends also to manifest a favourable influence on the cardiac complications. It is true that we have no direct statistical evidence of the value of the treatment as regards endocarditis; for the ratio of heart complications appears to be about the same in those treated by other methods, but it is probable that at the time of the available

statistics the treatment had not been commenced sufficiently early, and probably the slight manifestations in the young had not been treated at all. I have been very careful in this paper, hitherto, to keep closely to the strictly legitimate conclusions from observed facts, but I may hazard the opinion, not perhaps to be substantiated by positive evidence, that the forms of cardiac disease as observed now in patients treated by the salicylates are not so extensive and severe as they were formerly, when patients were not so treated. I have distinct and indisputable evidence that in some cases manifesting aortic disease, though no articular phenomena were in existence, the administration of the salicylates in full doses has been followed by a marked amelioration of the symptoms referable to the heart. I may be permitted to formulate my conclusions as to the treatment of disease of the aortic valves resulting from rheumatic endocarditis:—

1. In all cases manifesting signs of disease at the aortic orifice, whether obstructive or regurgitant, if there be an immediate association with acute or subacute rheumatism, it is of the first importance to counsel complete rest in bed. The observance of such rest is sometimes sufficient to allow a complete compensation to be brought about.

2. In such cases digitalis and other special cardiac tonics should not, as a rule, be employed until time has been given for observation, and for the use of appropriate means to subserve genera nutrition.

3. In cases in which there is reason to believe that the lesion is chronic, in relation with a remote attack of rheumatic fever, with no evidence of the recent existence of subacute rheumatism, the administration of digitalis, convallaria, or caffeine is indicated, but a prolonged course of any or either of these agents is undesirable. It is better that they be administered for periods of one or two weeks, and then that general tonics be alone prescribed; for, the energy of the ventricles being once increased, this may be maintained without the aid of agents specially influencing the cardiac muscular fibre; and in aortic disease agents which considerably modify the rhythm of the heart are not without danger.

4. In the case of a young subject in whom there is no evident manifestation of rheumatism, and yet a very low tension of pulse, which cardiac tonics fail to modify, it is probable that rheumatic endocarditis is in progress, and absolute rest with the administration of the salicylates should be counselled.

I now propose to consider the treatment to be adopted in the cases of disease at the aortic outlet which are induced by atheroma—aortitis deformans. In these there is no history of acute or subacute rheumatism, the subjects are, in the great majority of cases, over forty years of age, and the disease has been of slow development, with no notable signs to mark its onset. In

some cases there may be some difficulty in determining whether or not there has been an anterior endocarditis of rheumatic origin, for, as I have said, this affection may develop without arthritic or other signs of acute rheumatism. Generally, however, the differentiation presents no difficulty, for there are evidences of degenerative and senile changes, the arteries are hard and tortuous, the temporals are prominent and cord-like, and, except at the later stages, the pulse possesses nothing of the Corrigan (water-hammer) character, but manifests high tension; in fact presents the characteristics so ably described by the late Dr. Mahomed.

As to treatment. Supposing it to be recognised that there is a change at the aortic outlet inducing obstruction or regurgitation, or both, and that this is associated with high tension in the arterial system, with sphygmographic evidence of a broad tidal wave, and so of effort on the part of the left ventricle, are agents which augment the force of ventricular systole to be withheld? According to my interpretation of the evidence afforded by my cases, certainly *not*. It is precisely in such that digitalis, caffeine, and convallaria are singularly beneficial, and the objections which I have so strongly urged against digitalis in the treatment of the purely rheumatic form of disease at the aortic outlet have little or no force. It is important, however, to be remembered that these objections have to be reasserted in the *advanced* conditions of atheromatous disease, when the orifice has become so distorted that regurgitation is very free. In most of the cases of aortic disease due to atheroma digitalis may be administered for long periods. It may seem, if we look at the conditions superficially, that it is illogical when the evidence indicates high tension in the arterial vessels to administer an agent which shall augment the tension, but further consideration will show that theory consorts with practice. The danger is not so much the augmentation of ventricular force, as the failure of the muscle of the ventricle to rise to the height of its requirements and so to enter upon its retrograde course of degeneration. Its more perfect systole, as brought about by the cardiac tonic, means not only a better propulsion of the blood through the obstructed terminals, but a better supply through the coronary arteries to its own structure. The only objections to digitalis in this form of disease are when it (*a*) increases the suddenness of the ventricular contraction, or (*b*) induces a notable perturbation of rhythm, such as the pulsus trigeminus—objections rarely manifested in the atheromatous, though often asserted in the rheumatic, form.

To supplement or supplant digitalis, caffeine is often very valuable. In cases attended with the appearance of much lithic acid or lithates in the urine, caffeine citrate in five-grain doses three times a day causes free diuresis, an increased elimination of solids, and great general improvement. In this dose the drug

should not be continued more than three or four days, but one dose of five grains may be given every evening. So much relief from suffering is thus afforded that it is sometimes difficult to persuade the patient to omit the dose occasionally for a night or two. I am convinced, however, that such occasional omission is desirable: the change of one form of cardiac tonic for another is often very beneficial; I have seen great improvement when convallaria has followed digitalis.

I turn now to the evidence concerning agents of an opposite character—cardiac depressants. For the treatment of pain having the characters of angina, nitrite of amyl by inhalation, and nitro-glycerine, in solution or in tablets, are agents of the highest value. It may, however, be an important matter for consideration whether these agents may be administered continuously for long periods. In some cases manifesting high arterial tension without evidence of valvular disease, I have seen great advantage from long-continued courses of nitro-glycerine. Often very small doses—1-200th gr. thrice daily—suffice to keep all adverse symptoms in abeyance. I can conceive that it could be baneful, however, if regurgitation had been more free, or if there had been great and increasing obstruction of the coronary circulation; at any rate, I am sure that a caution is necessary to patients who are entrusted with a prescription for nitro-glycerine, for I have had evidence that as there is a morphinomania, so also there may be a nitro-glycerinomania. In cases manifesting high arterial tension without implication of the aortic valves, such doses—and it has been a matter of surprise that a dose of 1-200th of a grain three times a day suffices—may be continued for an indefinite time with nothing save advantage. It seems quite probable that the general arterial tension being thus relieved, atheromatous changes may be kept in abeyance. It is different, however, if disease exist about the aortic orifice; then the relaxation of tension may lead to an insufficient supply of blood through the coronary arteries to the heart. This is no valid objection to the occasional use of these medicaments in such a case, for heretofore I have found no treatment of greater value when pain is paroxysmal and severe.

Concurrently with these agents which immediately affect the heart and circulation, and occasionally for periods to supplant them, in cases in which the aortic valves are involved in atheromatous change, I consider that alkalies are of signal advantage. A very convenient form for protracted administration is this:—of bicarbonate of potash and soda, of each ten grains; of powdered ginger, five grains; of powdered leaves of digitalis, one grain; the powder to be taken in water thrice daily one or two hours after meals. The iodides, especially the sodium iodide, have been strongly recommended in these cases, and, indeed, my friend and colleague, M. Huchard, considers that iodide of sodium is almost

a specific for angina. In those in whom there is a distinct history of syphilis, the administration of the sodium iodide in gradually increasing doses, five, ten, fifteen, and twenty grains, three times a day, concurrently with cardiac tonics, is indicated, and I consider that M. Huchard's estimate of the value of the drug may be justified; but in others in whom the on-come of the disease has been gradual, and in association with lithæmia or with chronic renal disease, there is no advantage over the treatment by the alkaline bicarbonates, and in some the iodide is distinctly hurtful. Certainly I have not found it so uniformly beneficial as in cases of aneurysm of the thoracic aorta.

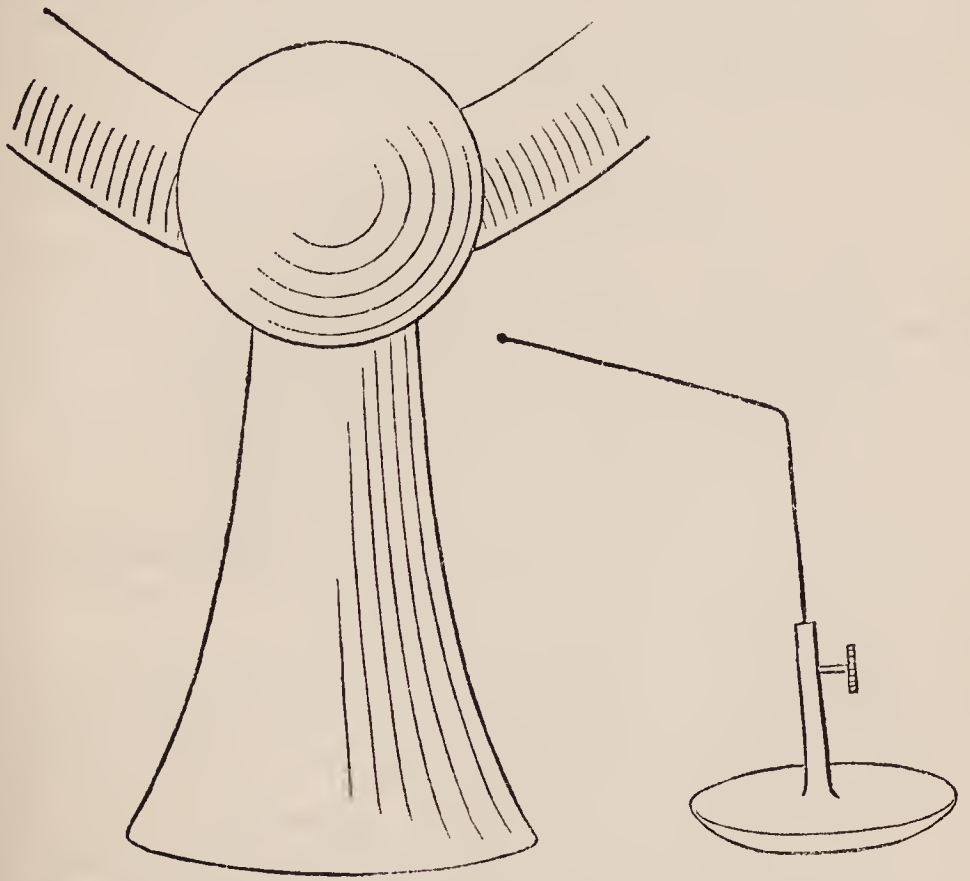
Concurrently with these means of internal medication and friction, massage, and in some cases systematic bathing, can, I consider, be proved to be of signal advantage. Liniment of aconite and belladonna may be employed, and often distinctly relieves the pain referred to the sternum, but for protracted daily use no liniment has any advantage over massage practised with the soft portions of the thumb and palm, dusted occasionally with a little lycopodium or powdered Fuller's earth. In a case of *advanced* atheromatous disease at the aortic orifice, I should hesitate before advising thermal treatment at any of the well-known watering places; but in a lady manifesting aortic obstruction, with albuminuria, which happily passed away, together with arthritis, I found great improvement follow a course of treatment at Aix-les-Bains. —*Lancet, Dec.* 24 *and* 31, 1887, *pp.* 1260, 1308.

14.—ON A NEW INSTRUMENT FOR DETERMINING THE "TIME" OF CARDIAC MURMURS—A SYSTOLOMETER.

By William Whitla, M.D., Physician to the Royal Hospital, and Consulting Physician to the Ulster Hospital, Belfast.

My little contrivance consists of a small saucer-shaped disc of metal, about half an inch in diameter, from the concave surface of which arises a hollow stem of metal, which receives a piece of fine silver wire capable of being retained by the tiny thumb-screw in the socket formed by the hollow stem. The end of the wire is bent at a suitable angle, and tipped with a small bead, or made probe-pointed. The convex side of the disc is warmed, and being tipped with lead plaster will firmly adhere when pressed against the chest wall over the region of the apex beat of the heart. The motion of the impulse is thus communicated to the wire, which, acting as a lever, can be made to exaggerate each movement in proportion to the length of wire. If now in the vicinity of the apex beat the ordinary stethoscope (single or binaural) be applied, and the wire so adjusted that it taps slightly against the wood of the stethoscope, the ear will hear what may be practically regarded as an artificial standard systolic sound by which murmurs can be

timed with ease and accuracy. A little experience will dictate the way in which the wire should be bent or turned so that its tap will regularly fall upon the bell of the stethoscope. The latter should be placed at such a distance that the lever will not strike it at the very beginning of the act of impulse, but just at the instant when the full force of the apex beat has been communicated to the wire. It is easier to use this appliance along with the binaural stethoscope, as the operator can thus have the use of his eyes in adjusting the mechanism. After fixing the disc and wire *in situ* it is advisable to apply the stethoscope, and listen carefully for a few moments to the heart sounds before bringing the wire in contact with the wood. In this way the intensity and quality of the sounds or murmurs, and the length of the pauses, etc., can he examined and appreciated when, the sharp rap of the wire on the wood being induced, the rhythm will be demonstrated.



This little instrument, which for convenience might be termed a systolometer, may be modified in various ways; thus I have replaced the metallic disc with a minute cup-shaped piece of india-rubber, such as is used for suspending small articles from the polished surfaces of window panes or mirrors. The rubber being pressed firmly against the moistened skin will adhere like the leather sucker known to every schoolboy, and will remain *in situ* sometimes sufficiently long to allow of examination. It is needless

to say that the systolometer can only be used when a distinct impulse is present.

A very satisfactory form of systolometer can be extemporised by attaching a section of a wine or lemonade cork over the apex region, as referred to by Dr. Dickinson in his recent paper, and after securing it in position with strips of adhesive plaster, a piece of bent lemonade wire having been inserted into the cork can be used as a lever to strike the bell of the stethoscope, and mark the moment at which the natural first sound of the heart should be heard.

In a future contribution I hope to be able to give the results of this simple mechanism, applied to the investigation of some doubtful problems concerning the working of the healthy heart and the mechanism of the presystolic murmur. That the principle is correct upon which its usefulness depends there cannot be any doubt, and its application is now suggested with the hope that in the hands of abler observers its form will be improved and perfected, so that to the student especially its use may be an advantage.—*British Medical Journal, Nov.* 26, 1887, *p.* 1146.

15.—ON LOCALIZED UNILATERAL SWEATING IN THORACIC ANEURISM.

By R. L. MacDonnell, M.D., Physician to the Montreal Hospital.

The object of this paper is to bring before the notice of the profession a symptom of thoracic aneurism, previously unobserved—localized sweating over an area corresponding to the distribution of those intercostal nerves, which were thought to have been pressed upon by the tumour.

Johnson, æt. sixty-two, coloured, a barber by trade, was admitted into No. 11 ward of the Montreal General Hospital on the 31st of December, 1885, complaining of severe pain in the epigastrium and dyspnœa upon exertion.

This pain began six years ago in the left side of the chest, where it is still sometimes felt, and gradually worked its way to the present site. The patient can remember, too, having suffered from pain in the side, occasionally, as long as twenty-five years ago, but does not think it was exactly the same kind of pain. Of late years, though it has varied in intensity, yet it has never been absent. It was a stabbing pain in paroxysms lasting about half an hour, and was accompanied by attacks of retching and by dizziness, so that it was regarded at one time as dyspepsia, at another as a bilious attack. Latterly it had become very severe, so that he was obliged to seek relief at the hospital. Dyspnœa on exertion was first experienced about one year ago, and has been gradually becoming worse ever since. During the last two months a sense of suffocation has prevented his sleeping upon either side.

Present condition.—The most prominent symptom is pain in the chest, always in the left side, in the neighbourhood of the fifth and sixth ribs, usually much worse at night, and occasionally felt shooting down the inner side of the left arm, but not so severely now as formerly. The pain is unaffected by breathing, coughing, or by movements of the arm or trunk. A slight cough with a small amount of mucous expectoration is present. There is constant dyspnœa, which is greatly aggravated at night, and owing to which he is almost entirely deprived of sleep, but during the day he dozes frequently and is at all times more or less drowsy.

Physical signs.—The upper part of the chest, particularly on the right side close to the manubrium, is prominent and there is a heaving impulse over this regiongenerally, and very extensive pulsation in the epigastrium. The apex of the heart has undergone outward displacement to the nipple line, and beats forcibly but regularly between the fifth and sixth ribs.

Posteriorly there is a distinct bulging of the chest wall. In the left interscapular region there is also visible pulsation, but no thrill or perceptible vocal fremitus. The pulsating area is dull on percussion and occupies that portion of the interscapular region corresponding to the third, fourth, fifth, and sixth ribs. Over this area a faint systolic murmur can be heard.

Treatment.—On admission and for two months afterwards he was obliged to remain in bed in a sitting posture, but after that he was able to lie down and afterward to move about the ward. Iodide of potash in ten grain doses three times a day has been given from the day of admission, December 31, 1885, to date. No particular restrictions as to diet have been made.

For the first six weeks in hospital the condition remained in the main unchanged. There was generally very severe pain complained of at the seat of the aneurism posteriorly, and on several nights sharp anginal attacks had occurred. On the 17th of February, 1886, it was first noticed by the clinical clerk that there was *localized sweating* over an area on the left chest wall, which corresponded more or less accurately with the course of the fifth and sixth ribs. The skin generally was unusually harsh and dry, but over this area there was continuously an oozing of perspiration which could be both seen and felt. At intervals this sweating was present from the day when first noticed up to the middle of May, and did not seem to be dependent upon or coincident with the attacks of pain and dyspnœa, though the patient noticed that he has been free from pain since the sweating ceased, nor could it be determined that it had occurred more copiously at one time than another. Several other nervous manifestations were also observed. On the 5th of April a sudden attack of severe and continued tremor in the left leg set in, which lasted altogether about twenty minutes, and was accompanied by nearly total loss of sensation over

the whole body, and after this tremor had subsided analgesia of the left side remained and was present up to the time of his leaving the hospital in June.

Any record of the occurrence of localized unilateral sweating in thoracic aneurism is unknown to me. The cause is not very difficult to conjecture, that with such a large tumour pressing upon and eroding the dorsal vertebræ there must be pressure upon the origin of the intercostal nerves is safe to assume. But it is a question in physiology whether ordinary irritation of a mixed spinal nerve can produce sweating in the distribution of that nerve. Physiologists hold that inasmuch as there is a sweating centre in the medulla oblongata from which fibres are sent along the ordinary mixed nerves, sweating can be induced by direct or reflex stimulation of these nerves in an animal. On these grounds we may assume that the sweating of our patient is the result either of direct or reflex stimulation of the intercostal nerves which supply the area over which the sweating was observed. Moreover, this area corresponded to the distribution of the nerves nearest the centre of the tumour, and for that reason the structures most likely to be subject to pressure.

The other nervous symptoms I am inclined to attribute to anæmia of the nerve centres induced by the regurgitation at the aortic orifice, an effect not uncommonly observed in connection with that condition.

Johnson left the hospital in June, 1886, and owing to my absence from Montreal was lost sight of. On my return in September I made inquiries in various directions without success, but in the April of this year his wife came to ask me to see him. The old man whom I had given up as dead was now keeping a restaurant, and though the active part of the business was conducted by his wife and daughters, he was able to take a share in it. After leaving the hospital in June, 1886, he found himself very much better and able to walk no inconsiderable distances. He has been taking thirty grains of iodide of potash daily almost uninterruptedly since he left the hospital, getting the old bottle filled in the dispensary department. The urgent symptoms had left him, so that for the ten months he had no necessity for seeking advice, although the pain in the side has been severe at times and always has returned to the old site. Shortly after his return home the feet had become swollen and remained so, but for a few weeks. Had slept fairly —that is, for three or four hours at night, and, perhaps, as many in the day—and been able once more to lie upon either side. The appetite has been good and digestion no longer troublesome—in short, he felt so well that he asked my advice as to the advisability of accepting employment in the Pullman Car Company.

Inprovement was evident in the physical signs. The prominence at the upper end of the sternum was still there, but there was

no visible pulsation, except in the epigastrium. Posteriorly, where pulsation had been so strongly evident, it was now barely visible, and that, over an area in diameter of about one inch situated just below the spine of the scapula. No bulging was perceptible, vocal resonance diminished. Dull area of the tumour extended from the spine to the angle of the scapula. At the base of the lungs breath sounds were weak, but there was no dullness.

This case illustrates admirably the benefit to be obtained from iodide of potash. There was no rest in bed, no restriction in diet, nothing was done for the man for the last sixteen months but to administer regularly and persistently iodide of potash with the effect described of relieving symptoms and of reducing the size of the tumour.—*American Journal of Medical Science, March*, 1888, *p.* 251.

16.—THERAPEUTIC USES OF SULPHATE OF SPARTEIN.

By J. Mitchell Clarke, M.B. Cantab., Assistant Physician to the Bristol General Hospital.

Of ten cases of mitral regurgitation, due in seven to rheumatic fever, in one to endocarditis following chorea, in the other two patients to anæmias associated with violent palpitation, eight were completely relieved, and in the two anæmic patients the murmur disappeared, so that it was probably due to relative incompetence from dilatation of the left ventricle. The two cases that did not improve were very bad ones, and were afterwards treated by digitalis, and other measures, without any benefit. The quantity of urine and of urea excreted was increased in six patients. Dyspnœa and præcordial pain appeared to be relieved first, followed by the disappearance of œdema in the most speedy instance after three days' treatment. An increased feeling of well-being was noticed by all, at first even by the two patients in whom the cardiac symptoms were not ameliorated. The pulse was rendered less frequent, stronger, and more regular.

In two or three instances it was found that a small dose, one-sixteenth of a grain, given at intervals of three or four hours, produced the greatest regulating effect on the pulse, and relieved arhythmia where larger and less frequent doses had previously failed to do so. A study of these cases and of others shows that spartein is likely to be of great service in mitral regurgitation, relieving the symptoms in most instances rapidly and completely.

In mitral stenosis we may expect good results when the pulse is small, weak, and irregular, but in this form of heart disease the effect produced by it seems of shorter duration, and more immediately dependent on the continual administration of the drug. Though the patients improved whilst taking it, the good effects ceased on leaving it off. Four out of five cases of mitral stenosis

to whom I gave it improved, however; one being able to lie down at night, which had been impossible for three years before.

In one woman, after taking one grain every six hours for three weeks, sharp cutting pains at the left shoulder-blade and over the heart came on, with a feeling of tightness in the chest. These symptoms ceased on reducing the dose.

In aortic regurgitation, when the violent pulsation of a greatly enlarged heart produces much pain and distress, spartein is a valuable remedy, quieting and regulating the excited cardiac action without unduly prolonging the systole; in these cases tracings showed that the excessive force and rapidity of the heart-beats were lessened, *pari passu*, with a gradual fall in the arterial tension. Small doses were here most beneficial. In other forms of hypertrophy it will be found useful when the heart acts violently and irregularly. In the hypertrophy combined with extremely high tension of chronic Bright's disease the effect was to stimulate the cardiac contractions, while the arterial tension was not further raised nor the quantity of urine increased.

In a number of patients suffering from various forms of chronic lung disease with obstruction to the pulmonary circulation, and where compensatory changes had not been established in the right heart, or after being established had broken down, I found spartein of great value; dyspnœa, præcordial pain, and palpitation were relieved almost at once, and in several a cough grew less. In two cases, where there was reason to suspect fatty or other changes of malnutrition in the heart-muscle, no benefit was noted.

Of five cases of asthma, four were entirely relieved, the other was not benefited. The administration of spartein was combined with inhalations of pyridin; improvement was slow, all being under treatment from one to five months. The severity of the symptoms was very much diminished, the attacks cut short, and rendered less frequent after a short time, one to two weeks, and the patients could keep comfortable whilst they continued the drug but if they left it off were liable to relapse. Gradually the attacks returned less and less often and became milder, and finally ceased at the end of the winter; so that the ultimate effect in four out of five cases was satisfactory, though the slow progress was disappointing after the enthusiastic statements that have been made as to the value of spartein in asthma. In one old man suffering from asthma and chronic bronchitis the pulse-rate, that had previously been 96-84, was slowed to 50 in the minute, and was rendered more forcible. This slowing took place after two months' continuous administration of the drug, and though accompanied by marked amelioration of general symptoms, must be, perhaps, regarded as due to accumulation.

In cases of palpitation, without evidence of organic heart disease,

spartein gives immediate relief, which becomes permanent after the remedy has been continued for a week or two. In chlorosis, with dilatation of the heart and the usual murmurs, I found that spartein, given in combination with iron, quickly relieved palpitation, pain, dyspnœa, and œdema of the ankles, and in due course the murmurs and the evidences of dilatation when present disappeared.

The effects of spartein in three cases of Graves's disease were remarkable, and if a wider experience confirms them, it will be a valuable remedy in this disease. In two of the cases the usual remedies, including a long course of arsenic, and the passing of a constant current through the neck, etc., had been tried without effect. On giving spartein the pulse-rate dropped in one week from constant rates of 132 and 136 to the minute, to rates of 72 and 84 respectively, the coincident throbbing and pulsation of the thyroid and of the great vessels of the neck ceased. Other symptoms were relieved, especially the nervousness and weakness previously complained of, and the size of the thyroid tumour distinctly diminished. The gain in strength and general well-being, with improvement of appearance due to gain of flesh and colour, was striking.

In the third case, a more severe example of the disease than either of the preceding, there was general improvement, with diminution of violent pulsation in the thyroid and over the neck and face, but the pulse-rate of 144 was not reduced to less than 96 to the minute, varying between this and 108. This patient suffered from continual fine tremor of the muscles, especially in the limbs; while taking spartein this tremor remained absent, but returned if the drug was left off. She has improved in strength and feels well while she is taking it. She has now been taking one-quarter of a grain every four hours for six months.

I gave spartein for periods varying from two weeks to six months in daily quantities of one-third of a grain to twelve grains, the latter large dose was continued in one case for a month with benefit. It is best to begin with one-sixteenth of a grain every four hours, and gradually increase up to two grains, if necessary until the desired effect on the circulation is obtained. When the dose is given less frequently the result does not seem so good; sometimes a large dose may be gradually reduced without loss of effect. There is no fear of accumulation. The signs of an overdose are palpitation, præcordial pain, small, rapid pulse of high tension, and a feeling of great weakness, or even trembling.

Spartein begins to act in about thirty minutes after it has been taken by the mouth, and its action lasts from about five to six hours. This rapidity of action, at first consisting in a stimulation of the heart, rise of arterial tension not occurring until a little later, indicates the use of spartein in asystolic conditions of valvular

disease, where a speedy effect is desired, giving it superiority over more slowly acting drugs.

In these conditions, too, a small dose should be employed (one-sixteenth to one-quarter of a grain), since in these doses spartein seems powerfully to stimulate and regulate the heart with the smallest rise of arterial tension, perhaps not more than is the normal accompaniment of increased cardiac force.

Diuretic effect is most marked with fairly large doses, half a grain to two grains; with small it is not so evident, but is often present. Flushing of the surface of the body occurred in from one to two hours after administration in most cases.—*International Journal of Med. Sciences, Oct.* 1887, *p.* 369.

17.—ON THE CAUSES AND TREATMENT OF ANÆMIA OR CHLOROSIS IN GIRLS.

By Sir Andrew Clark, Bart., M.D., F.R.S., &c., President of the Royal College of Physicians, London.

The alleged special causes of chlorosis are three in number. First, there is the theory of Virchow, which ascribes the malady to an imperfect development of the heart and larger arteries, associated with an original weakness of the formative power of the blood-cells. The second theory, advanced by Sée, explains the origin of the disease by the inability of the organism to meet the great reparative demands suddenly made upon it by the advents of menstruation and the concurrent increase of growth throughout the body. The third theory, proposed by Zander, ascribes the disease to the presence in the blood of unassimilable forms of iron, and alleges that this is owing to a deficiency in the organism of hydrochloric acid. It is held that by the use of this agent the iron is converted into assimilable forms, and that so the disease is cured.

It would be unprofitable to enter here into a critical consideration of these alleged causes of the malady under consideration, for the issue of judgment would surely be that they were inadequate to account for it. The malady occurs almost equally among the rich and the poor, among the generous livers and the plainly fed, among the cultured and the rude, among the idle and the occupied; and it seems to be independent of race or of nation, of climate or of soil, of mountains or of valleys, of seaside or of inland, and of country or of town.

Is, then, the problem of causation insoluble? I think not. And I even venture to express the opinion that if we submit to careful examination the conditions of life which accompany the appearance of this anæmia, we shall be able to discover in them violations of physiological laws common to every case, wherever found, and sufficient through the results of those violations to explain the es-

sential characters of the disease. In the period between the advent of menstruation and the consummation of womanhood there arise physical, mental, and moral changes which greatly influence the girl's habits of life and thought. She becomes self-conscious, and enters into new relations with those whom she meets. She thinks of her appearance and tightens her waist. Afraid of getting fat, she stints herself in food, and eats of only dainty things. With her sense of modesty deepened, she is shy of being seen about the closet. Unprompted by nature, and perhaps disdainful of such affairs, she omits the daily solicitation of the bowels. And so at last it happens, through the compressed waist, the insufficient food, and the disregarded desire or the neglected trouble, that the bowels become either obstructed, confined, or inadequately relieved. In either case the fæces accumulate, are retained, and not only undergo changes in themselves, but provoke changes in the mucous membrane with which they are in contact. As one of the results of these changes, both chemical and biological, there are produced new substances, ptomaines and leucomaines, which are injurious to the organism, and which, absorbed into the blood, originate in girls of a nervous type of organisation those alterations of the constitution of the blood which constitute the true pathogeny of this anæmia of girls.

Now, it is necessary to ask if this alleged cause of the malady is adequate to the explanation of it? Well, it has been shown by Bouchard, in his lectures on Self-intoxication in Disease, that the poisonous activity of human fæces, even in healthy men, is very great. And he concludes that they are formed throughout the intestines of an adult in twenty-four hours a quantity of alkaloids, which, if excretion were stopped and all were absorbed, would be sufficient to destroy life. It is, then, impossible to doubt that poisonous alkaloids are formed in the alimentary canal ; that when excretion is seriously diminished they must be in some degree absorbed; and that, mixing with the blood and entering the tissues, they must produce some sort of injurious effects determined by the rate of absorption and the amount absorbed.

And here arises the crucial question of this communication, Can any sufficient collateral proof be given that fæcal retention is not only adequate to explain the phenomena of this disease, but also that it is the true cause of it? Yes, there can, through an exposition of the means of cure; for the treatment which most speedily and effectually cures this disease is a treatment which by the use of tonic aperients produces full and regularly recurring action of the bowels. With the suspension of this treatment the disease recurs ; with its resumption the disease again subsides ; and no treatment appears to be permanently successful which does not provide means for securing daily relief to the intestinal canal.

What are the details of this treatment?

I shall answer this question best by giving *au naturel* the directions which I should prescribe for an ordinary patient. On first waking in the morning, sip a quarter of a pint of cold water. On rising, take a tepid sponge bath; dry quickly, and follow with a brisk towelling. Clothe warmly and loosely; see that there is no constriction of the body or of the limbs. Have four simple, but liberal, meals daily, arranged after this fashion: Breakfast, eight to nine—whole-meal bread and butter, with one or two eggs or some broiled fresh fish, or the wing of a cold chicken or pheasant, and towards the close of the meal half a pint of equal parts of milk and tea, not infused longer than five minutes. Lunch or dinner, one to two—fresh tenderly-dressed meat, bread, potato, well-boiled green vegetable, and any sort of simple farinaceous pudding or of cooked fruit, preferably apple; drink one glass of Burgundy alone or in half a tumblerful of water. Tea, from four to five—whole-meal bread and butter, with a cup of equal parts of tea and milk. Dinner or supper, from seven to eight—this should resemble the mid-day meal, but should be less in quantity. Nothing is to be taken after this meal, nothing between meals, and nothing but what is here set down. Walk at least half an hour twice daily, and as much more as strength and convenience will permit. Retire to bed about ten, and repeat the sponging and towelling. See that your bedroom is cool and well ventilated. Lead a simple, regular, active, occupied, purposive life; and do not notice or distrust yourself.

With such instructions modified according to individual peculiarities, I prescribe an old-fashioned ferruginous cathartic, to be taken twice a day, about eleven and six. Usually it is an acid mixture, designed somewhat as follows: Ferri sulphatis, gr. xxiv.; magnes. sulph., ℥ vi.; acid. sulph. arom., ℥ i.; tinct. zingiberis, ℥ ii.; infus. gent. co. vel quassiæ, ℥ viii.; Fiat. mist. Sig. One-sixth part twice daily, about eleven and six. Occasionally this acid mixture produces sickness, dries the skin, and is otherwise ill borne. In such cases I prescribe an alkaline cathartic mixture: Ferri sulphat., gr. xxiv.; sodii bicarbonat., ℥ ii.; sodii sulphat., ℥ vi.; tinct. zingiberis, ℥ ii.; spts. chlorofor., ℥ i.; inf. quassiæ, ℥ viii. Fiat. mist. Sig. One-sixth part twice daily, about eleven and six. Sometimes neither mixture agrees, and then I prescribe sulphate of iron in pills with meals, and a saline aperient on first waking in the morning.

Upon the plan of treatment here described nine out of ten cases of this anæmia of girls recover their health in from one to three months; and if, when health is quite restored, one prescribes once or twice a week, an aloes, myrrh, and iron pill, in doses just sufficient to bring about a moderate natural action of the bowels, the recovery will prove in all probability permanent. But upon this statement some of my auditors will remark, "It is the iron which cures; it is not the aperient." That iron has much to do with the

cure of the malady I admit, but I doubt if it plays the chief part; and I know that in numerous cases the use of iron, arsenic, and maganese unaccompanied by aperients has failed to cure. Furthermore, I have seen many patients who, having been treated in this manner unsuccessfully for months, speedily recovered their health under the influence of a ferruginous cathartic mixture and a regulated diet. And so clear and strong is the teaching of my experience upon the point under consideration that if in the treatment of this malady I were perforce limited to the employment of one sort of drug, the drug which I should choose for use would be an aperient.

And here I end where I began, by contending that the anæmia or chlorosis of girls arising in nervous constitutions with imperfectly developed sexual organs is caused for the most part, and in the first instance, by feculent retention and its consequences, and that the right as well as speedily successful treatment lies in the enforcement of a sound hygiene, the administration of ferruginous cathartics, and in the provision after cure for a daily and, as far as possible, a natural relief to the bowels.—*Lancet, Nov.* 19, 1887, *p.* 1004.

DISEASES OF THE ORGANS OF RESPIRATION.

18.—ON RHEUMATIC LARYNGITIS.

By E. Fletcher Ingals, M.D., Professor of Laryngology in the Rush Medical College, Chicago.

Rheumatic laryngitis is a painful affection of the vocal organ, attended by more or less hoarseness and fatigue of the parts after talking, and sometimes by grave or even fatal obstruction of the glottis. The affection may be either acute or chronic. The acute disease, from having been associated with articular rheumatism, has been recognized for several years, but it has been but little studied, and the literature of the subject is meagre.

Through the kindness of Dr. J. S. Billings, the library of the Surgeon-General's office has been searched for me, but we have succeeded in unearthing only two articles upon the subject. The first of these, from a thesis of E. J. A. E. Emery Desbrousses, 1861, relates to a case of acute febrile articular rheumatism with laryngeal localization, which terminated fatally. The patient was a woman twenty-four years of age, suffering from acute articular rheumatism and pericarditis. On the fourth day the larynx became involved, causing aphonia and severe pain, with suffocative attacks, which continued with varying severity until her death from slow asphyxia on the twentieth day. At the autopsy the arytenoids were found bare, but not necrosed, and on the left side

a reddish serous fluid was found in the articulation, which demonstrated the rheumatic laryngeal arthritis.

Of the chronic rheumatic laryngitis, to which I would call attention, I can find no mention in medical literature.

For many years past I have, from time to time, observed chronic painful affections of the larynx, attended by no erosions or ulcerations, and by but little congestion and swelling of the part. At first I was inclined to consider these merely cases of neuralgia, but several years ago I became convinced that they were not all of neurotic origin, and during the past two years several similar cases have been under my care which have confirmed me in the opinion that they are rheumatic in character.

The affection to which I wish to direct attention usually occurs in a person of rheumatic diathesis, but often the larynx or the tissues about the hyoid bone present the only evidence of the constitutional affection. In this disease, as in the chronic rheumatism of a mild character, which often affects the joints, or, as in muscular rheumatism, the pain is not constant, but may frequently disappear for a few days, especially during fine weather, to return again on slight exposure, or with changes in the temperature. Its course is erratic, but nearly always obstinate. These patients frequently have inherited or acquired a predisposition to rheumatism, and it is not unusual for them to complain of rheumatic pains in other parts of the body, but, singularly, they never suspect the true nature of the disease.

Several of the cases I have seen have been troubled with the pain for several months before coming to me, and I have usually found them filled with apprehensions of cancer. In no case has pain been very severe. In certain cases it has been most noticeable on using the voice, but it is often more troublesome when swallowing, and in some it is aggravated by every attempt at deglutition even of saliva. However, it varies in intensity from day to day, or from week to week, being nearly always worse in damp or chilly weather.

Patients commonly refer the pain to one side of the larynx, when this organ alone is involved, but in some cases it is also referred to the trachea, the region of the greater cornu of the hyoid bone, to the base of the tongue, or to the lower part of the tonsil on the corresponding side. In similar cases we sometimes find the pain confined to these latter regions, there being no involvement of the larynx, but even in these the patient is liable to experience fatigue of the vocal organ after talking. Hoarseness and loss of voice are also frequent symptoms.

Upon inspection of the parts, one or both arytenoids may be slightly congested, or the redness may be confined to one side of the fauces, or to the pharynx. The vocal cords remain clear and the inflammatory symptoms seem altogether inadequate to account

for the discomfort. In some cases the parts involved are slightly swollen, but in others no change of form is noticeable.

The diagnosis of chronic rheumatic laryngitis must be based on the history and symptoms, and the exclusion of neuralgia, and the various affections which cause organic change in the part. Acute catarrhal inflammations, chronic syphilitic laryngitis, and abnormal growths may be easily excluded. Tubercular laryngitis in its inception is often attended by fatigue of the larynx after talking and sometimes by pain, even before there is ulceration or swelling; but it has a different history from the rheumatic affections. In tubercular laryngitis the parts are usually paler than in health, while they are slightly congested in the rheumatic affection. In the tubercular disease the constitutional symptoms are marked, not so in the rheumatic.

Fully developed tubercular laryngitis cannot be mistaken for the affection under consideration.

In malignant affections of the larynx pain is often present, but from my observation I conclude that it does not often precede pronounced organic changes, tkerefore they are not likely to be confounded with the affection under consideration.

Rheumatic laryngitis is most likely to be confounded with neuralgia or paræsthesia of the organ. In distinguishing between these, the history must be carefully scrutinized, and rheumatic or neuralgic pains must be looked for in other parts of the body. In the rheumatic affection there are usually slight redness and swelling; not so in neuralgia. For confirmation of the diagnosis, we must sometimes await the results of treatment.

Rheumatic laryngitis usually runs a chronic course, extending over periods varying from two months to one or more years. In most cases, if not in all, there are periods of immunity from the soreness, bnt at other times there are quite severe exacerbations of pain. I recall one case which was troublesome at times for four or five years. Recovery may be expected ultimately, and the patient may and should be assured that the disease does not endanger life.

In the treatment of chronic rheumatic laryngitis I have derived considerable benefit from the local application of stimulant and astringent sprays, or pigments, and in some cases galvano-cauterization of the congested surface seems to have aided much in recovery. However, I have relied mainly upon internal remedies suited to the diathesis. Iodide of potossium, salicylate of soda, guaiac, colchicum, and cimicifuga, have all been tried with more or less success. Extract of phytolacca has been given with apparent benefit, and oil of gaultheria, in doses of fifteen minims, three times a day, has at times given satisfaction.

[Dr. Ingals gives the records of five illustrative cases, which we are compelled to omit, and remarks:—].

I am confident that, with more critical observation, we shall find many cases similar to those I have described, which are due to the same causes as muscular or articular rheumatism, in which we may obtain far better results from treatment than we have been accustomed to if we bear this in mind, and prescribe accordingly.—*American Journal of Medical Science, Jan.*, 1888, *p.* 22.

19.—ON LARYNGEAL PHTHISIS, AND ITS TREATMENT.

By Prosser James, M.D., Lecturer on Materia Medica and Therapeutics at the London Hospital, &c.

First of all, I would ask, what is laryngeal phthisis? No doubt definitions enough have been attempted, though it is exceedingly doubtful how far they have assisted the orderly arrangement of our views. When we meet with a certain kind of swelling of the soft tissues, accompanied by other symptoms, our experience tells us that the swelling is likely to lead to ulceration; or when this process has begun and we fear that the cartilages may become involved; or when, at an earlier stage, we encounter facts which warn us that tubercle has probably been deposited in the lungs, we may attribute the laryngeal symptoms to a similar deposit. But all this belongs rather to a history than a definition, and so many varieties of appearance, as well as of interpretation, occur, that the question may be thought worth attention as an introduction to others. Secondly, I would ask, is there such a disease as laryngeal phthisis? Of course we may apply the name to cases in which the stress of the disease falls on the larynx, but the lungs are so constantly involved that the laryngeal affection is often described as merely secondary—a complication of pulmonary phthisis. Some have even gone so far as to deny the possibility of primary laryngeal tuberculosis. Yet they cannot deny the existence of tubercle in other organs without pulmonary deposit. If so, why is the larynx to be exempted from such liability? They scarcely venture to deny that we may sometimes detect laryngeal phthisis before the skilled auscultator can discover pulmonary mischief, but then they assert that sooner or later this will appear. To this statement it might be objected that in such case the pulmonary deposit seemed to be secondary. The history of phthisis might suggest that any serious disease of the larynx would be likely to set up pulmonary disease in a predisposed person. The The difficulty of proving the existence of primary laryngeal phthisis lies in the fact that, if it exist, it so constantly leads to pulmonary disease that we cannot expect to find it uncomplicated on the post-mortem table, and if we did (through death from accident, for example), there would be room at an early stage for different interpretations of the appearances. This leads to a third question, what is the relation of bacilli to laryngeal phthisis?

Are we to make the presence of Koch's bacillus the sole criterion of the existence of tubercle? If so, not only is the diagnosis to be settled during life, but to be confirmed after death by this single sign, and to satisfy some of the occurrence of primary laryngeal phthisis it would be necessary to find the bacilli in the larynx, and demonstrate that the lungs were unaffected. Again, can cases of laryngeal phthisis recover? This question is continually recurring, and almost every time it is discussed facts are reported in favour of an affirmative reply, and confirmatory of the views I propounded, and the cases reported by me in 1873. The foregoing questions lead up to the next, What is the proper treatment of laryngeal phthisis? I am not in the habit of describing my recoveries as "cures," but I do attach importance to treatment. While greatly valuing vapours, sprays, and other local measures, I am equally anxious as to the constitutional treatment. We have not merely to deal with a tuberculous larynx; the consumptive patient needs our help. Just now the bacilli enter so largely into professional views, that two points in reference to local measures demand attention, namely, (*a*) the influence and power of antiseptics, (*b*) manipulative interference. (*a*) Twenty-one years ago, when I was physician to the North London Consumption Hospital, a room was fitted up for me for the purpose of keeping patients for any length of time in an atmosphere more or less charged with nascent sulphurous acid gas. Other disinfectants have since taken its place, but the simple method of employing sulphur fumes has again quite lately been resorted to by Dr. Sollaud, who, as reported in the *Gazette des Hôpitaux* (May 26th), employed a phthisical sergeant for sixty days in the disinfection of the rooms of the barracks. At first the man suffered from much oppression, and increase of cough and expectoration, with a burning feeling in the throat, &c. But he soon found he could easily tolerate the fumes, and at the end of the time he was greatly improved in every respect, and the number of the bacilli had considerably decreased. In laryngeal phthisis sulphur fumes are often too irritating, and the proportion of gas should be graduated carefully and its use regulated properly. Other disinfectants are often more agreeable, and therefore preferred, but the object of using them is the same, and the bacilli afford some measure of the effect. (*b*) Manipulations. In the presence of a wave of surgical enthusiasm which is not deterred from the attempt to eradicate localised disease from the lungs, we must be prepared for some bold proposals for dealing with the larynx. Accordingly, at the Société Médicale des Hôpitaux, it has been recently asserted that M. Ehring has submitted 200 cases of laryngeal phthisis to surgical interference. His method seems to be two-fold; to scrape and clean tubercular ulcerations, and to inject lactic acid and iodoform under the mucous membrane. M. Gougenheim said that out of

the 200 cases treated by these methods, 28 have been cured. M. Labbé said these statements were so extraordinary that they could not be accepted without reserve. The injection of an acid solution of phosphate of lime into localised tubercular disease has been lately systematically used by Dr. Kolischer. Cures of fungous masses, of enlarged glands and tubercular joint diseases are reported. Professor Albert, who was at first sceptical, has stated to the I. R. Society of Medicine of Vienna that he had been surprised at the results, especially in joint disease. The injections are very painful, and are followed by severe reaction, both local and general. Swelling, induration, breaking down and throwing off of tissues, sometimes the formation of a line of demarcation resembling gangrene, are reported, accompanied by fever. Nevertheless, we hear that Dr. Kolischer is extending the method to laryngeal and pulmonary cases, but no report has at present been published of the results attained. The catastrophes that have sometimes followed interstitial laryngeal injections in other cases may serve as a warning to ambitious operators, and lead them to await the judgment of the Vienna Society of Medicine on this method. So far as the scraping and cleansing of existing ulcers recommended by M. Ehring, it is much less heroic than the deep incisions into swollen tissues advocated by Maurice Schmidt at the Milan Congress, and declared by him to be curative, but which severe treatment does not seem to have commended itself to others. Surgical interference is no novelty. Schmidt's deep incisions in 1880 were but the outcome of scarifications advised many years before but mostly abandoned. Thus Dr. Marcet, in 1868, recommended punctures and scarifyings in the swollen and "indurated form" of the disease, although he admitted that "when the laryngeal mucous membrane is extensively infiltrated with tubercular deposit the scarification had better be withheld." His object was to "let out the blood which, collecting and accnmulating within the membrane, yields material for the formation of tubercles." Others proposed scarifying in œdematous conditions, the object being different. It seems difficult to admit the propriety of this treatment in a disease the tendency of which is to pass into ulceration. Does not a wound seem likely only to hurry the case into the next stage? A recrudescence of the inclination towards surgical measures may well cause us to weigh our responsibilities; and without any desire to dogmatise, I may be permitted to add that further evidence would be required to induce me to abandon gentler treatment which has already given me some successes. The test to which we should put these surgical proposals is this:—If the patient could understand his position, how would he wish to be treated? We should do for our patients what we should wish to be done for ourselves were we in like case.—*Medical Press and Circular, Sept.* 14, 1887, *p.* 237.

20.—ON THE USE OF THE TEREBINTHINATES IN DISEASES OF THE RESPIRATORY MUCOUS TRACT.

By Prosser James, M.D., Lecturer at the London Hospital.

Therapeutists have lately evinced a revival of interest in the terebinthinates. One result of this is seen in the extended use of terebine in bronchial affections. I now invite the attention of practitioners to two other allied products, more particularly as to their use in diseases of the respiratory mucous tract. These are (1) the essential oil of the mountain pine and (2) hydrate of terpin.

1. The *Mugho* or *Mountain Pine* is the Pinus pumilio of Lambert, and from which exudes the once-prized Hungarian balsam. By distillation of the young branches with water a volatile oil is obtained long known as "oleum templinum" or "Krummolzöl." This is the most potent agent in the so-called "pine-cure" practised at Reichenhall and other German spas. At these resorts the vapour of the water, as it escapes into the inhalation rooms, is medicated with the volatile oil. The pine baths at these spas are not medicated with the Krummolzöl, but with a much cruder product—viz., an extract obtained by evaporating a decoction of the wood and branches, and perhaps also the residue after the distillation of the oil. Moreover, the baths are mostly employed in rheumatism, gout, and other affections for which thermal baths are suited; while the inhalations are chiefly used in diseases of the respiratory tract. By improved apparatus and greater care in the selection of the material a much finer product is now obtained—in fact, a very pure essential oil, oleum pini pumilionis; and this it is which has lately been imported under the fanciful name "pumiline." This essential oil possesses in a high degree the odour of the most fragrant variety of the pine, and, moreover, is less irritating than other fir oils. Sprinkled or sprayed about a sick room it imparts a lasting and grateful fragrance to the air, which is not oppressive and it seems to be disinfectant; or it may be thrown into a little warm water and allowed to evaporate; or it may be diffused by a steam inhaler (Dr. Lee's or Siegle's) or a hand-ball atomiser. Either of these methods may be utilised for the purpose of maintaining an atmosphere laden with pine odour as a substitute for that of Arcachon, Reichenhall, or Bournemouth. The oil can also be taken internally, and is admirably adapted for inhalation. For prolonged inhalation a few drops may be put in a suitable respirator, and will be preferred by most patients to other inhalants. For short steam inhalations ten to twenty drops may be put into any common inhaler half full of water at 150° to 160° F. and the vapour inhaled. It is, however, much better to diffuse the oil through water by magnesia, powdered silex, or prepared talc in the proportion of 40 to 60 minims of oil to a scruple of magnesia and an ounce of water. A teaspoonful of this mixture added to half a

pint of cold water is to be stirred in the inhaler, and then half a pint of boiling water being added, a convenient temperature is obtained; as it cools, a little more boiling water can be added if it is desired to prolong the inhalation. This medicament will be found much milder than the vapor olei pini sylvestris (B.P.), and may therefore be employed when the official formula is found too irritating. It is a very mild stimulant to the mucous membrane, and an agreeable remedy for inhalation in relaxation, congestion, and chronic catarrhal affections of the respiratory tract. Oleum pini pumilionis is also an excellent addition to other inhalations, such as creasote and various essential oils. It disguises the disagreeable odour of some and imparts its own fragrance to others. It also mixes well with eucalyptol and other inhalants. *Internally*, the ordinary dose is from one to five minims. Small doses can be taken in lozenges or on a lump of sugar, as terebine is often taken, or a mixture can be made with tragacanth, &c., or larger doses may be given in capsules. In the stomach it acts as a carminative. It is quickly absorbed, and probably behaves in the blood and tissues like other terebinthinates. It is eliminated chiefly by the lungs, kidneys, and skin. It is its action on the bronchial membrane during excretion that renders it valuable in disease of this surface, being a stimulant, expectorant, and disinfectant, hence indicated in chronic bronchitis, dilatation of bronchi, bronchorrhœa, some states of phthisis, and other affections. The effect on the kidneys should not, however, be forgotten. The violet odour of the urine is produced as with some other terebinthinates, and small doses seem diuretic, but its use in diseases of the urinary passages manifestly requires care. *Externally*, sprinkled on flannel, or, better still, on spongio-piline, the oil is a cleanly, prompt, and useful stimulant and counter-irritant, and sometimes appears to possess slight anæsthetic properties.

2. *Terpin Hydrate* affords a curious contrast to oleum pini pumilionis. It has but a slight taste, is rather insoluble, has no odour, and is solid. It may be seen as small needles when it spontaneously crystallises from a mixture of turpentine and water, or may be obtained in large rhombic crystals by allowing alcohol (three parts), turpentine (four), and nitric acid (one) to stand in shallow dishes three or four days. Terpin hydrate is only dissolved in small proportion by cold water or turpentine, but is taken up more readily by hot water, alcohol, and ether. For this reason it is best given in pills or wafer paper. For small doses pills containing two grains each are convenient, and one can be taken every three or four hours. For larger doses, which should not be repeated so frequently, wafer paper is better. An emulsion may also be made, but this is not an agreeable method. The hydrate may, however, be dissolved in warm glycerine, and after solution an equal quantity of some syrup may be added. This makes a suitable

linctus. From sixteen to twenty-four grains in the ounce gives two to three grains to the teaspoonful, and this dose can be taken every three or four hours. It is well to begin with these small quantities, as they are often found sufficient to affect the bronchial membrane, and they act on the kidneys. Germain Sée, Hausmann, Ferreira, Chéron, and others, have given much larger doses —ten grains, and in some cases fifteen. It is obvious that such doses might have a serious effect on the kidneys, and large quantities given to animals have been followed by hæmaturia. A dose of ten grains in wafer paper produces a feeling of fulness and heat at the epigastrium, and a sense of cerebral stimulation which in sensitive individuals may amount to giddiness. The effects of both small and large doses are analogous to those of other terebinthinates, and it is as a tasteless, odourless substitute for them that it is most useful. In restraining the cough and secretion of bronchitis, and stimulating the membrane to more healthy action, perhaps also disinfecting the sputa, it will be found useful. Germain Sée also found full doses restrain the copious sputa of some cases of phthisis, and he met with no gastric irritation after long continuance of the drug; but others have not been equally fortunate. In some instances small doses seem to increase bronchial secretion. It has also been employed successfully in hæmoptysis. Its diuretic effect has been utilised; and, in short, it has been tried in most cases in which the other terebinthinates are useful, including neuralgias. Dr. Royland seems inclined to credit hydrate of terpin with some hypnotic property, but perhaps the sleep may be attributed rather to the rapid relief to the cough, which, in the cases he reports in the New York Medical Record, so constantly followed the administration of the remedy.—*Lancet, March* 10, 1888, *p.* 463.

21.—USE OF MENTHOL IN LARYNGEAL AND PULMONARY PHTHISIS, AND IN OTHER DISEASES.

By Albert J. Beehag, M.B., C.M., Clinical Assistant Ear and Throat Department, Royal Infirmary, Edinburgh.

It is now nearly two years since A. Rosenberg of Berlin brought before the notice of the *Berlin. Medicin. Gesellschaft* his menthol treatment in connexion with pulmonary and laryngeal phthisis, and in a paper read before the same Society on 6th April, 1887, he further established his former statements from the results of his more extended clinical experience since that date. A twenty per cent. solution of menthol in olive oil is the strength generally employed. Olive oil may be made to take up more than twenty per cent. on heating, but the menthol will recrystallize when exposed to the cold, and the mixture form a solid mass. Slightly warming will cause it to redissolve, and in this manner we can

use the drug in a highly concentrated form. The syringe devised by myself, and made by Gardner of Edinburgh, serves for injecting the fluid both into the larynx when it is the seat of the disease, and into trachea when the lung only is affected. It is better, especially when the disease is localized in the larynx, to make at each sitting two or three injections, of about fifteen minims in each, directly on to the part affected. By this means more prolonged contact of the agent with the diseased tissues is secured.

After each injection, which ought, of course, to be made under the guidance of the laryngeal mirror, the patient should be made to take deep inspirations, whereby the cooling and anæsthetic effect produced by the menthol is accelerated. No danger whatever results from such an endolaryngeal or endotracheal method of treatment, and no untoward or disagreeable effects follow the introduction of such large and concentrated solutions of menthol into the system. The patient at first feels a slight burning sensation in the larynx, which is quickly replaced by a cool pleasant feeling, and in a few moments a warm sensation is experienced all over the chest, due to the solution finding its way into the lungs, which it does according to Reichert's experiments of a series of twelve endotracheal injections on calves and sheep, even to the finest bronchioles. The injections should be performed once or twice daily for about two months, and the treatment by injections should be combined with inhalations of five minims, or as much as the patient can bear, of the same solution in a pint of steaming water, if possible at first every hour during the day. Also a convenient method, and one which is employed by Dr. M'Bride in the Infirmary, is to drop some of the solution of menthol on to a piece of cotton wool, and make the patient wear the same frequently before the mouth and nose. The patient sometimes finds it more convenient to sleep with this on.

Menthol possesses in a marked degree the anæsthetic action of the oxyhydrocarbons of the volatile oils. A few minutes after its application, pain and other uneasy sensations in the larynx disappear, and that *bête noir* in laryngeal phthisis, viz., dysphagia, is combated to such an extent, that the patient is at once enabled to eat without pain. The effect of this is readily appreciated. Nutritious foods can be at once taken into the system, and the general health of the patient thereby improved. With regard to the anæsthesia produced by menthol, Rosenberg has pointed out a very interesting fact, viz., its cumulative effect. "After the first injection," says Rosenberg, "the anæsthesia lasts from one to three hours, after the second or third still longer, so that after a week the effect lasts for a whole day."

The antiseptic properties of menthol also are very marked, as has been experimentally proved by Koch and other observers upon various forms of bacteria. Rosenberg has demonstrated its destruc-

tive effects upon tubercle bacillus by subjecting pure cultivations of this micro-organism to menthol in a gaseous form.

Shortly after the beginning of the treatment, an improvement in the condition of the patient can be seen. If the larynx be the seat of the disease, one notices that the abnormal secretion is much diminished, and its whole surface becomes much cleaner and healthier. This is also shared by the ulcers, which finally heal, leaving beautiful smooth cicatrices, better than one sees after the use of lactic acid. But there are certain cases which don't yield to this treatment so readily, and these are marked infiltrations and tumefactions. These yield better to the application of lactic acid, but even here the resistance to treatment is great, and is accelerated by first curetting the infiltration with Hering's laryngeal curette, and afterwards by the employment of menthol or lactic acid, or of both. I say both, because menthol is a very useful adjuvant in the lactic acid treatment (introduced by Krause) where it should be injected two or three minutes before the application of the acid. By this combined method a quicker result is obtained, for even by itself the lactic acid brings about quicker cicatrization of the ulcers. But there are certain advantages which menthol has over lactic acid. The former, if injected carefully and precisely with the laryngeal syringe, and not applied with a brush, which causes pain, is certainly not unpleasant to the patient in its application, and when the subjective symptoms in the larynx are subdued some few minutes afterwards, the patient's spirits are raised, and the appetite at once manifests itself, especially if dysphagia were a symptom—so that the patient, as I have repeatedly seen, gets to enjoy the treatment. In the case of lactic acid, where one must apply the remedy accurately and vigorously for a few seconds to the affected part—best done by means of a piece of cotton wool affixed to Krause's Kehlkopfpincette, or to Hering's laryngeal Tamponträger—one can readily understand that such vigorous treatment is not at all unaccompanied by pain, though its severity in many cases is not so great as one would expect. As for the patient losing flesh during the lactic acid treatment, which has been asserted by some, I must say that such has not been my experience, and I have had a large one in Krause's clinique in Berlin. What appears to me to be a very important advantage in the menthol over the lactic acid, is that in the former the medicament is not confined to one spot, but extends over a large surface, viz., the whole of the larynx, trachea, etc.

Besides improvement and cure in the laryngeal condition, one sees a similar result in the pulmonary condition, if the patient come early enough under treatment. Directly after the injection the patient experiences a remarkable lightness and freeness in the breathing. The sputa, during the course of the treatment, gradually lose their nummular character, become less and less purulent, and

finally disappear. There is a marked diminution in the cough and an improvement in the voice. The night sweats diminish, the bodily weight increases, and the system generally is improved. Rosenberg relates the very interesting case of a patient affected with both pulmonary and laryngeal phthisis in its early stage, who was treated by him with menthol. The morbid processes here had cleared up to such an extent that the patient was enabled to "pass" the ordinary examination for life insurance at the hands of a well-known expert of a life insurance company. (Manifestly the rules of the insurance companies in Germany are not the same as in Great Britain, where the applicant is required to enumerate previous illnesses.)

I can give an unqualified confirmation of the good results from Rosenberg's method of treatment, since through his kindness I have treated many of his patients, and watched his results for many months. One should not give up the treatment too early, though later the applications may be made less frequently. Of course it is not pretended that very confirmed cases of phthisis can be cured by this method of treatment, but its employment here relieves many of the distressing symptoms. The sputum is more easily expectorated, the coughing much alleviated, and the morbid processes for a time retarded.—*Edinburgh Medical Journal, Jan.*, 1888, *p.* 625.

22.—ON GANGRENOUS ABSCESS OF THE LUNG, PROBABLY CAUSED BY THE STUMP OF A TOOTH PASSING INTO THE RIGHT BRONCHUS, TREATED BY PUNCTURE AND DRAINAGE—RECOVERY.

By William Strange, M.D., Senior Physician to the Worcester General Infirmary.

E.M., a robust young woman, aged 23, with well-developed chest and fine physique, and in good health, although in infancy she had been the subject of scrofulous abscesses of the hands and feet, took chloroform for the extraction of several stumps of teeth, on February 17th, 1887. A few days afterwards a troublesome irritative cough came on, with slight muco-purulent expectoration. This condition continued until the month of June—four months. During this time she was never entirely laid up, although frequently confined to her bed for two or three days; nor did she lose very much flesh or appetite. The cough continued to annoy her greatly; the expectoration increased, and the strength began to fail. She was first seen by me as an out-patient at the Infirmary on June 8th, and on the 15th her case appeared to be so serious that she was placed under treatment in a private house.

Symptoms.—There was almost incessant cough, preventing any sleep, except by the use of narcotics; large muco-purulent expectoration, which was very offensive; coarse *râles* were heard

over a large area of the centre of the right lung, extending from the upper third of the scapula down to the ninth rib vertically, and from close to the spine to just above the nipple transversely. In front, there was great tenderness over the third, fourth, and fifth ribs, but no pointing or bulging of the intercostal spaces. Over the other parts of the lung respiration was free and normal, with the exception of some dulness at the base. The left lung was rather hyper-resonant. The paroxysms of coughing continued unceasingly for several hours at a time, almost abolishing sleep. There was not very much loss of flesh; the appetite good; pulse 110; temperature 102° F.

At a loss to conjecture a sufficient cause for this condition of the lung, all signs of pneumonia or of tuberculosis being absent, I fell back upon the history of the tooth-drawing business. From the account given to me by a young friend who accompanied the patient to the dentist, it appeared very probable that a stump had escaped the operator, and had passed down the trachea into the right bronchus. This idea was confirmed by the friend stating that there was great searching of the mouth for a stump, and some alarm expressed. Further, she stated that before the patient applied to me at the infirmary, rings of cartilage, showing necrosis, were found in the sputum, which was horribly offensive. From June 15th to July 18th the case continued to increase in severity and urgency. The cough was almost incessant; bad bedsores formed from the continuous sitting posture; the temperature, however, only varied between 101·4° and 99°, being often normal.

The pulse on June 16th was 146, on the 19th 160, then it fell gradually to 120 on the 26th, again rose to 140 or more, and finally dropped, under large doses of brandy, to 120, where it remained until July 18th, the thirty-third day of treatment, and five months from the date of the tooth drawing. During the whole of this time hectic fever continued to consume the patient's strength. The expectoration was putrid to the last degree, the room, and also the house itself, being only rendered bearable by chlorine gas freely used, with deodorants to the sputum. For some time past the sputum had contained a large quantity of broken down pulmonary tissue which settled in quantities to the bottom of the vessel. From two to three pints of this stinking stuff were expectorated daily. Occasionally it ran in a stream from the patient's mouth, and this caused a very tiresome aphthous condition. Large amphoric breathing with metallic tinkling was now heard in the centre of the lung over a space of over four inches square.

The hope that the abscess would finally empty itself, and give the patient a chance of recovery at length died away. The quantity of pus expectorated was increasing instead of diminishing, and the strength was reduced to the lowest ebb by the violent hectic and loss of sleep.

Having now, on July 18th, five months from the access of cough, to deal with the above named state of things, namely, a gangrenous abscess of very large dimensions, with continuous destruction of lung tissue, and which abscess had certainly existed for thirty-four days, if not longer, I came to the conclusion that nothing but puncture of the lung, reaching the abscess, and draining it, would give the patient any chance of surviving, even for a few days. Sir W. Foster had seen the patient with me a few days before this time, and, although disposed to recommend a little more delay, he agreed with me that puncture would probably have to be performed to give the girl the only, though remote, chance of recovery.

July 18th. Convinced myself that even another day's delay might prove fatal, I resolved to operate. Assisted by my colleague, Dr. Crowe, the needle of an aspirator was pushed quite home into the chest, just below the ninth rib, and at one inch behind the axillary line. A drop of pus appeared almost at once. Withdrawing the needle, a large curved trocar, nine inches in length, was thrust in its track to a depth of about eight inches in an upward and forward direction towards the fifth interspace in front. Pus of the same stinking character as that expectorated followed in large quantity. A drainage-tube was now pushed home through the cannula of the trocar by means of a probe, and the trocar was then withdrawn. The wound was dressed antiseptically with plenty of carbolic tow. There was no bleeding, nor any escape of pus or air into the pleural sac.

The subsequent history of the case may be given very briefly. Immediately after the puncture the expectoration lessened to a great extent, and in a few days quite lost its grangrenous odour, nor did any lung tissue now appear in it. The cavity was syringed out with fluid sanitas once, sometimes twice, a day; but in two or three days the discharge was reduced to small dimensions, and quite lost its offensive smell. The rapid diminution in the quantity of pus discharged after drainage was set up proves, I think, that the secretion of such immense quantities had been kept up by the presence of the pus itself in the lung.

The condition of the patient improved so rapidly that in a few days hopes of recovery could be entertained. The pulse, indeed, remained small aud very feeble, about 120; but the respiration became much easier, and fell from 48 or 50 to 36, or thereabouts. She was now able to lie down, which for weeks she had not been able to do. The night sweats diminished, and sleep was obtained.

Ten days after puncture the patient had so far improved that I ventured to leave her to attend the meeting of the British Medical Association in Dublin. On the twelfth day after puncture the tube was taken out and shortened about two inches, as its extremity was causing pain in the lung, apparently from the granulating process going on in it and the tube impinging against it. It was exchanged

for one of larger calibre, in the hope that the tooth stump might be expelled through it, but it never appeared. On August 17th, the sixty-fourth day of treatment, and the thirty-second day after puncture, the tube was finally withdrawn, the discharge having practically ceased. The wound soon healed. The condition of the lung at this date was as follows:—There were a few small *râles* over the central portion of the abscess space, normal respiration having returned to the greater part of the lung. There was some distant amphoric breathing in the centre, and some dulness below the point of puncture, but there was no evidence of any pus being contained in the pleural cavity. What dulness there was appeared to be owing to the compression which the lung had undergone by the abscess. Expectoration slight; mucoid; no smell; still a little irritative cough; the hectic gone; the bedsores, which were very severe and tending towards gangrene, showing signs of improvement; appetite returning; temperature generally below normal; pulse 114; very weak.

The treatment throughout was, of course, of the most sustaining character, with wine and brandy in very large quantities. Turpentine inhalations were used when it was possible for the patient to breathe them, and terebine was given internally, but without much apparent benefit. Large doses of quinine, arsenic, and iron were given so long as they were required.

On September 12th, seven months after the accident, and fifty-five days after puncture, she was discharged cured. She went out for a drive for the first time on that day.

Condition of the lung at this date:—The respiration was everywhere normal, except a slight dulness at the base, where it had always been dull, and a very little amphoric breathing just in the centre. There was cough at times, especially on exertion, or on taking a long breath, and some mucous expectoration. There was considerable flattening over the site of the abscess, otherwise the chest was rapidly resuming its former fine development. Her appetite was good, and she was rapidly laying on flesh. The bedsores were still unhealed, they having caused an enormous loss of muscular structure.

Condition on October 27th. Eight months after accession of mischief, and six weeks after last report, she had gained flesh to the amount of two stones; her appetite was good; she could walk alone a short distance. There was some irritative cough on exertion, owing, probably, to the cicatricial contraction of the lung tissue. The breath sounds throughout the affected lung were entirely normal, except a little remaining dulness at the base. There was no pectoriloquy, metallic tinkling, or amphoric resonance. In fact, all signs of this immense abscess and its cavity had disappeared.

Remarks.—Cases of gangrenous abscess of the lung are not very uncommon, particularly where old bronchiectasis exists. A few

such cases have been treated by incision. Two, to which Dr. Saundby has kindly referred me, were reported March, 1886, to the Royal Medical and Chirurgical Society by Dr. C. T. Williams and Mr. Godlee. They were both cases of bronchiectasis, treated by incision and drainage. These gentlemen held that the indications for operation were (1) the disease confined to one lung, (2) situate in the lower lobe, (3) with adherent pleura. Of course it will be seen that in my case bronchiectasis was entirely excluded. There had been no evidence of any abnormal condition of the lung previous to the tooth-drawing. In fact, the patient was up to that time in perfect health. It may be thought that there were some favourable circumstances in this case which tended towards the hope that a happy issue would crown the operation. It may be supposed that the abscess had crept up close to the pulmonary pleura, so that a small depth of lung only had to be punctured. Adhesion to the costal pleura may also be supposed, preventing the shedding of pus or air into the pleural cavity, and the setting up of either an empyema or a pneumothorax, or both. I do not believe that any of these favourable conditions were present in this case. First, because the pus was not reached until about seven inches had been traversed by the trocar; and, secondly, because there had been no pleurisy capable of gluing the two surfaces of the pleura together. Both auscultation and percussion pointed to the presence of a considerable layer of sound lung between the pleura and the abscess wall, which layer was at least several inches thick. If I am called upon to explain the absence of bleeding at the operation, and of effusion of air or pus into the pleural cavity, I can only say that I attribute it all to the resiliancy of the healthy portion of the lung, and the pressure exerted by the close-fitting piece of elastic tubing which was inserted immediately after the pus had been evacuated.—*British Med. Journal, Nov.* 26, *p.* 1145.

DISEASES OF THE ORGANS OF DIGESTION.

23.—THE TONGUE AS AN INDICATION OF DISEASE.

By W. Howship Dickinson, M.D., F.R.C.P., Senior Physician to St. George's Hospital, London.

The tongue is an index of constitutional states, seldom of individual diseases. An ancient theologian described the face of a wicked man as a map of the empire of sin. It has been fancied that the tongue presents a map of the empire of disease; and a writer, though one of no great note, has gone so far as to divide the lingual surface into a number of rectangular regions as numerous as the United States of America, which he places under the rule of separate organs; the larynx, the bronchi, the lungs, the

pleuræ, the large intestine, the small intestine, the kidneys, and the brain each possessing a distinct territory. The heart, says this writer very wisely, has a common control over all. But in truth the tongue has no such local signification; it seldom points to solitary organs or isolated disorders, but is rather a gauge of the effects of disease upon the system than an indication as to the locality of it. It is often a guide in treatment, so far as treatment is general, not local; and it is an important help in prognosis. It may, indeed, be doubted whether any means of observation open to the physician, including the pulse and the thermometer, give him more insight into constitutional states than he can derive from the tongue. Clinically it always speaks the truth, and in a language which is not foreign to the experienced physician. And how much truth, or rather how many truths, are to be read on how small a page! Conditions of fever and of feeding; states of the nervous system; the maintenance or abeyance of vital secretions; failure of vitality, though we may not be able to find out why; in one case that the disease is getting the better of the patient; in another that the patient is getting the better of the disease;—all these are discernible to the educated eye. The clinical value of the tongue largely depends on the number of interests it represents; these are more or less mingled in its indications, and the impression they convey is a combined one; but it is none the less valuable because comprehensive; it gives to a glance what otherwise could only be learned by detailed inquiry.

It has been shown that the white coat of the tongue essentially consists of horny epithelium, and that the varions grades of coating are mainly due to its increase. I have not dwelt upon the parasites which are apt to gather upon the coat; these are only of secondary interest; they do not determine the character of the coat or of the tongue, and they have been subjected to an exhaustive exexamination by Mr. Butlin, with results in negation of their practical importance. It has been shown that the several degrees of coat are mainly due to overgrowth of epithelium, though in a smaller measure to its want of removal, and that there is a remarkable correspondence between the heat of the body and the coating of the tongue. If the tongue be coated, the indication is usually of febrile disturbance without especial reference to the stomach or liver, and points more to the general system than the alimentary. Though something is to be ascribed to disuse, yet I think I have shown that too much has been; and that more than one modern observer, like an uncharitable pedagogue, has attributed to idleness what is directly due to illness.

Superadded to the *forcing process*, if I may so speak, of fever, we have step by step other changes, dryness, furring, and incrustation, which are essentially connected with want of saliva. I have endeavoured to show that this diminution or arrest is declared by

the state of the tongue almost as certainly as by observations on the ducts, and is the chief cause of the furring and incrustation which accompanies it. It is true that in the crust are parasites, but these are secondary; the primary fact is the want of saliva, a clinical indication always of importance, though the process by which it is brought about is not always the same. I have shown the effect of dehydration in diabetes and by diarrhœa; but it has, I think, been made clear that the most frequent and important concomitant of the dryness is a certain failure of bodily force and function which I have not assumed to describe with physiological exactness, but have expressed by such terms as weakness, prostration and exhaustion. I do not ignore the effects of deprivation of water, of alcohol, and of opium; but, nevertheless, the relation to which I have drawn attention, so far as it concerns such dryness as to cause incrustation, has a general hold. It is difficult not to infer that with the salivary are other glandular failures, more especially such as concern the digestive system. Good digestion waits on appetite. Putting aside diabetes, where there are special circumstances, it may be said with general truth that with the dry encrusted tongue appetite is *nil*, and solid food impossible, not merely from the local difficulty caused by the dryness of the mouth, but from inability more profoundly seated. It may be inferred without rashness that the loss of power to take food is connected with a loss of power to assimilate it; and if the digestive function is in abeyance it is not likely that the digestive fluids are abundant. Hence it presents itself as what may be called a working probability that a want of the more vital juices concerned in nutrition may be indicated by the want of saliva which is sometimes so conspicuously displayed. Physicians acknowledge in their practice some such guidance; the dry and encrusted tongue is seldom disregarded as a call for animal liquids, which require little digestion, and alcohol, which requires none. To translate theory into practice is not only dangerous because the theory may be wrong, but the means may be ill-adapted though the theory be sound. I have often taken the dry tongue as an indication for peptonised food, and thought it beneficial, but have not as yet had enough experience to speak confidently.

Proceeding from the varieties of clothing which dryness produces, we come to the opposite, but sometimes succeeding, condition —that of nakedness. This is often connected, like the previous, as has been shown, with want of saliva, of which it is usually a later concomitant. It may be simply due to this cause, but other circumstances are so often present that it is difficult not to assign to them some share in the loss of integument, and attribute this, in part at least, to the failure of nutrition which belongs to hectic fever and suppurative waste. When the tongue becomes dry and bare, it is ill with the patient. He is not sure to die, but likely to.

If, as has been said, the tongues of dying men enforce attention, it must be often directed to this. The indication of the red, smooth tongue is for what failing nutrition calls for—tonics, stimulants, and food, probably liquid, but nourishing. The failing pulse does not more surely tell of asthenic tendencies than, as a rule, does the red, dry, and polished tongue.

The tongue, indeed, has a whole book of prognostics written upon its surface. When the tongue is approaching the condition of health so as a rule is the patient, as is seen whenever the red, dry, and bare tongue acquires moisture and clothing. There is no better sign in diabetes than the resumption of the natural moisture by a tongue which has been dry. Something may be judged by the way an encrusted tongue cleans; if gradually and from the edges, well; less so when it scales, especially when the surface exposed is red and dry. One glance at a coated or plastered tongue may give an assurance, which perhaps could not be otherwise obtained, that the disease is on the wane. If the thick coat in the centre steeply shelves towards the sides and front, revealing a normal, moist, not over-injected surface, the tongue is in process of cleaning; the natural friction is over-coming the coating process, and tongue and patient are on the mend. A tongue acquires coat more evenly and generally than it parts with it; we can thus tell whether the coating is on the advance or decline, and apply this rule to the disease.—*Lancet, April 7*, 1888, *p.* 660.

24.—ON THE SYMPTOMS AND TREATMENT OF SIMPLE DILATATION OF THE STOMACH.

By T. Clifford Allbutt, M.D., F.R.S., Physician to the General Infirmary, Leeds.

[Dr. Allbutt having passed in review all the known causes of Simple Dilatation of the Stomach, and made some reference to its clinical associations and varieties, proceeds to speak of its manifestations and treatment as follows.]

I will now venture to make a few remarks upon the *symptoms* of dilatation of the stomach. And first let me preach this precept urgently—that in all cases of dyspeptic troubles the stomach be carefully mapped out. Even if but temporary dilatation exist, it is important that it should be known and dealt with. A man once consulted me who was in the way of seeing many doctors in his regular engagements, and had been prescribed for by nearly as many with little result. He called upon me, and I found dilated stomach, probably of no long standing. I cut off fluids and flatulent food, and he made a rapid recovery, and remains well. But a dilated stomach may more certainly be suspected if a wearing, aching pain abide in the pit of the stomach, if there be foul or acid eructations and marked emaciation.

Vomiting is not invariable. Some people have not the knack of

vomiting; in others the walls of the stomach may be too flaccid to aid the rejection of its contents; in others, where the stomach is hypertrophied in its mucous and muscular coats, as in gorging eaters, absorption and peristalsis may be fairly good. In such cases physical signs must be sought for. In better-marked cases the vomiting is often thus characteristic—that the stomach rejects its contents, generally voluminous contents, as a pump ejects water; the refuse comes forth in a rushing stream, often without any nausea whatever, and often at tidal intervals, which may be very long, may be as long as two days, but generally are less than that. In such cases we always see a drawn face, a worn and pained expression, and an emaciating body. The patient complains of constant wearing pain about the waist, relieved by the vomiting. The vomit may sometimes be mere catarrhal matter, phlegm and water, and is not then pathognomonic, but it is most commonly what we call in Yorkshire "swill"—i.e., a turbid sour liquid containing remnants of half-dissolved food in a state of active fermentation. It is usually dark in colour, and swarms with sarcinous and other low forms of life. Stir up the materials of a day's meals, add dirty water and catarrhal slime to it, set it aside at a temperature of 100° for a few hours, and thereafter froth it up with a stick, and you will have the foul vomit of gastroectasis. The stomach, like an incompetent urinary bladder, never really empties itself, however vigorous the vomiting, and the fetid remnant carries forward the process of of decomposition to all that is swallowed. The physical signs of this state when so complete are clear enough. The emaciated abdominal wall; the sac beneath it, quite perceptible to the hand lightly stretched over the surface, and often to the eye; peristalsis also visible perhaps if the muscular coat be hypertrophied (this more commonly in pyloric obstruction); splashing and percussion areas—all agree in declaring the diagnosis. I have seen on post-mortem examination the stomach dilated to the pubes. But all cases are not so easy. Sounds not to be well distinguished from splashing and succussion may be got in persons not known to have dilated stomachs; in neurotic subjects of borborygmatous tendencies this is not uncommon; but these in the latter are to be got only by kneading, never by shaking or swaying the body with the hands upon the crests of the ilia; the sounds, too, are got with more difficulty, and are not so marked. On the other hand, even in dilated stomach, splashing is often not aroused by the first manipulation, but when once aroused is loud enough, and easy to continue. In neurotic girls false splashing is often to be obtained by causing them to inspire deeply; indeed, I have seen this squashy sound associated with ordinary inspirations in such persons, and in these it will be noticed that the respiration is not so much thoracic as diaphragmatic.

Of percussion I will only remind the observer that the upper

line, which in acute or early cases, before the whole stomach is dragged downward, may reach to the fourth or even to the third rib, is at least as important as the lower. If the lower line be below the umbilicus, a dilated stomach may, I think, be certified. Whether the percussion sound be metallic, tympanitic, or even muffled, I think, is of no diagnostic value, so that it is often difficult to be sure from the quality of the sound whether we are tapping stomach or bowel. Tapping with a pleximeter while the stethoscope is on the stomach is sometimes a help.

Another caution is this—that in certain cases of relaxed gastrophrenic ligament the whole stomach may be displaced downwards; hence the importance of ascertaining the *upper* line. With all possible care, however, thus far dilatation may not be ascertained or may not be measurable. Hence we have to resort to other physical aids, of which the development of gas in the stomach by the ingestion of effervescing salines is the best known. By this means the area may be mapped out, and as the gas passes away the line of fluid contents may also be mapped out. It must be remembered in the less severe cases that a *displacement* of the stomach *downwards* when filling betrays so far a *dilatation*, as the normal stomach in filling should rotate forward. Leube's sound is well known, and indicates the lower margin of the stomach, either by its perception through the abdominal walls or by its length from the teeth, which Penzoldt says should never be more than one-third of the height of the body. I have not verified this statement. All I can say is that the sound should never be felt below the umbilicus, and if a pint and a half of water (thirty ounces) be injected the dulness should not fall below that point. My judgment upon this sounding is that in thin subjects we rarely need it, and in fatter ones the point is indistinct. Even in these cases, however, if a ball bellows be affixed to a hollow sound a gurgling may be made in the stagnant contents and their site detected, or the viscus distended with air so far as to reveal its size and form. Thiébaut, in an excellent monograph (Paris, 1882), suggests that a plumb-line ending in a lead may be worked through a hollow sound. This I have not tried. Distending gases should be expressed from the stomach before the plummet or sound is used. The elimination of pyloric disease from the diagnosis must depend on other considerations, and must not now detain us. Nor need I detain you with any account of the pathological anatomy of gastroectasis, which is well known. The dimensions of the cavity are sometimes enormous. Blumenthal found the vomited matter alone in one case to weigh 16 lb. A common increase is to about four times the normal cubic contents—i.e., an increase up to about six quarts. Simple dilatations may be quite as extensive as a dilatation secondary to pyloric disease.

As regards treatment, I shall set aside all general and pharma-

ceutical means, and refer to three main special methods, which are—(1) to cleanse the stomach; (2) to prevent its distension by physical or chemical means; and (3) to combat the prevalent constipation. I must premise that dilatation of the stomach, when it has reached a well-marked degree, is a most difficult disease to cure. The patient's condition may be made much more tolerable and his nutrition improved; some cases may be ultimately cured; but too often, after all, "prævalebunt fata consiliis." The *constipation* tends to prevent both absorption and the free passage of intestinal contents. It is best overcome by portal purgatives, such as the laxative salines. As the stomach recovers tone the costiveness becomes less obstinate; I presume the bowels then receive more reflex stimulation. The dietary must be strictly limited to such foods as shall not, by bulk or by decomposition, distend the stomach. Meals must be small, if frequent, and must consist of flesh, fish or fowl, and the more digestible and finely divided fats. Dr. Fenwick even recommends cod-liver oil. Farinaceous foods cannot be wholly forbidden, but, owing to their tendency to gaseous decomposition must be greatly restricted. I have always urged that the dietary should be as dry as possible, but I see Dr. Fenwick recommends liquid food. I am sure liquid should at any rate be restricted, and tea, beer, aerated waters and the like, forbidden. Small quantities of pure but diluted spirit are useful. Vegetables must be wholly replaced by a little lemon juice. Milk, I think, is often used too freely in these cases. As the peptic glands are often reduced or obliterated, artificial digestive means should not be forgotten. But all these precautionary means are useless if we drop our food into the foul puddle which the dilated stomach never wholly throws off. Dr. Fenwick, to whose great authority on these questions I am wont to defer, speaks with disappointment and mistrust of the only known means of cleansing the gastric receptacle —namely, Kussmaul's system of washing out. This troublesome and disgusting performance offends the more refined and sensitive class of patients, and in dealing with them the physician is too soon persuaded to lay aside or altogether to forbear the use of the stomach-pump. But gastroectasis is far more common in the less refined and more roughly-fed members of society. They show less repugnance to the washing-out method, and in them, therefore, its excellent results become more evident. A thorough conviction of the essential value of this treatment in hospital and working-class patients strengthens me in insisting upon its use in all such sufferers. Some patients flatly decline to have anything to do with the process; but in others, less prejudiced, a little practice and use soon brings toleration. A few have thrown up the plan in disgust after a few trials, but so many continue it patiently, in spite of trouble and disgust, as to testify not only to the purifying powers of the method, but to the unspeakable relief which it brings to present

distress. To deny the catheter to the palsied stomach seems to me as unreasonable, and in practice is as great a blunder, as to deny it to the palsied bladder. Yet, familiarly as the practice is now known in and around Leeds, I believe it is but little used in English practice generally. My own experience of washing out in dilatation of the stomach has been equalled, perhaps, by few living physicians, and I have never known any ill result from it. Among other cases I may refer especially to the many under our care in the Leeds Infirmary, which Dr. Jacob and Dr. Barrs, now our colleagues, used during their term of residence so assiduously to wash out. I have never seen the cramps or tetany recorded in a few cases of washing out by Kussmaul himself, and again lately by Dujardin-Beaumetz; but it requires, no doubt, great determination and patience to carry out the plan over the necessarily long duration of time required for permanent relief. In Virchow's *Jahres-Bericht* for 1883, Epstein is reported to have obtained great success in washing out the stomachs of dyspeptic infants under one year old. His experience extended over 286 cases, and is published in the *Arch. f. Kinderheilkunde* (Bd. iv., s. 325). He uses a No. 8-10 Nélaton's catheter, and warm water with a little benzoate of magnesia, and relieves catarrh, wasting dyspepsia, &c. As a means of diagnosis, I find that in purely nervous dyspepsia (so called) the stomach between meals contains no remnants of food, no fungi, no excess of hydrochloric acid and mucus, but from this starting-point one may begin to note all degrees of catarrh and ectasis. Plain warm water is, I fancy, all that is required for the ablution, though I generally suggest the addition of a little borax to the wash. In the beginning of treatment, when the contents of the stomach are bulky and lumpy, it is well to use the stomach-pump. It is said that the suction of this instrument may and does wound the mucous membrane. If so, I have never seen any harm from this, nor do I hear that harm resulted in the cases wherein wounds were said to have been made. With a large lateral opening in the tube and careful exhaustion there is practically no likelihood of harm. For subsequent treatment, when the stomach contents are clearer and less bulky, a syphon is simpler, and, moreover, if filled with a reservoir, can be used by the patient himself. The cistern must be placed just above the level of the head and attached to the flow-pipe, and an exit-pipe must be carried to a pail on the floor. By pinching the flow-pipe the patient can easily regulate the flow. As I have already hinted, the œsophageal tube should have a spacious oval opening on the side of it a little away from the rounded tip. These tubes are foolishly made, as a rule, with the tip perforated by several finer holes. Such tubes block directly, and dishearten both doctor and patient. I have some very intelligent patients who have thus washed themselves out daily for a year or two or more, with unspeakable relief to their sufferings, rapid improve-

ment of nutrition up to a certain point, and a slow recovery of the stomach itself. Other remedial means, such as the use of antiseptic and other drugs and of nutrient enemata, I have not time now to discuss. Of electricity, however, I must say this: that it has greatly disappointed my expectations in whatever mode or however applied. The external application of faradism and of massage to the abdomen are, nevertheless, well worth a trial; though I suspect they have only the value of general faradisation and general massage, or are worthless. A cushion pad, supported by a bandage, should always be worn, and Leube directs his patients to lie as much as possible, and that on the right side only.—*Lancet, Nov.* 5, 1887, *p.* 907.

25.—ON PERFORATION OF THE STOMACH.

By Julius Dreschfeld, M.D., F.R.C.P., Prof. of Pathology, Victoria Univ.; Physician to the Royal Infirmary, Manchester.

[The following excerpt is taken from a paper on the diagnosis and treatment of Perforative Peritonitis read before the Manchester Medical Society.]

Of the various pathological conditions of the stomach which lead to perforation, ulcers form the chief source, and of these again the round or perforating ulcer forms by far the largest contingent. Brinton was able to collect 234 cases, and some of the conclusions which he drew from an analysis of these cases, borne out by a study of numerous observations published since then, and by my own limited experience, give some valuable aid to our diagnosis.

The *sex* in these cases of perforation offers nearly the same proportion as that deduced from the occurrence of the ulcer generally, namely: 160 females, and 74 males—the ratio of about 2 to 1. As regards the *age*, a remarkable contrast exists. In the female, the larger number of perforations occur between the ages of 14 and 30, and the average age is 27; in the male, the proportion of perforation increases up to 50, and the average of the age in the male is 42. This corresponds very closely with the cases I have been able to record. Again, as regards the situation of the perforation, an important fact when looked at from a surgical point of view, is the frequency with which an ulcer, situated on the anterior surface of the stomach, perforates; thus the ulcer on the anterior surface perforates 85 times out of 100 cases, while on the posterior surface, only 2, and on the pylorus, only 10 out of 100 perforate.

If we consider the previous history of the case, we find—and this is again of some importance—that in many cases where perforation ensues the symptoms of gastric ulcer have been either absent altogether or not well defined. Profuse hæmatemesis, excessive and constant pain, and symptoms of dilatation of the stomach, are, as a rule, absent, and this is not difficult to explain, as the

persistent pain is due in some measure to localised peritonitis, and, as a result, adhesions are set up which prevent perforation. Again, profuse hæmatemesis occurs more frequently when the ulcer is situated near to large blood vessels—*i.e.*, near the small or large curvature, a locality which we saw does not very often give rise to perforation; and, again, dilatation of the stomach follows the contraction of the ulcer situated near or on the pylorus, a situation where again perforation rarely takes place (probably from the thickening of the cicatrix). If we now consider the symptoms with which a perforation is ushered in, we find that though these symptoms vary somewhat, and an early diagnosis is not always possible, yet some characteristic signs are present, and to these I wish to draw attention, as most of our standard works treat of them but insufficiently.

(1) *Sudden pain.*—In all these cases (I have seen ten in number) this was present. The pain in one case came on two hours after a hearty breakfast on tinned salmon, in another (a railway porter) soon after lifting a trunk into a railway carriage, in another while digging in the garden, and in a fourth while straining when going to shout, whilst in the others there was apparently no exciting cause. The pain in all cases is very severe; it is either a continuous pain, or, as in two cases recently observed, it has more the nature of severe colic, occurring in paroxysms. The pain is associated with great prostration; at other times the pain, though severe, will not prevent the patient from moving or even walking some distance. The sudden collapse, described in some of our text books, is therefore by no means always present. The pain often becomes less and less marked as the case goes on, and this is not altogether due to the administration of opium.

(2) An important symptom is the *rigidity* of the walls of the abdomen—a symptom to which Ebstein drew attention, and which was markedly present in several of the cases which have come under my notice. This hardness or rigidity of the walls may be associated with either a retracted or a distended condition of the abdomen. The rigidity is probably due to an irritation of the peripheral nerves, and gradually subsides with the progress of the case.

(3) More or less *tympanitis* is present, as a rule, from the first onset of the perforation, and, it is needless to say, is due to the accumulation of gas in the abdominal cavity. The tympanitis is, however, rarely so extensive as stated in our text books; often it is localised and confined entirely to the epigastric region. In several cases the upper region of the abdomen was seen bulging out while the lower portion appeared slightly contracted. A most important accompanying symptom is the *disappearance* of the *liver dulness*, due again to the entrance of air into the abdominal cavity. In some cases the liver dulness may be entirely absent; in others there

is a marked tympanitic note on percussion to the right and left of the epigastrium. Where the patient has been examined shortly before the perforation was established, the symptom is of very great value. But where, as in most cases, the patient is seen only after the first signs of perforation have appeared, the diminution or absence of liver dulness is not easily distinguished from that caused by a dilated transverse colon, or that seen in extensive peritonitis (non-perforative). As a diagnostic aid in such cases, I would propose to puncture with a Southey's trocar. If the gas which thereby escapes is odourless, it is most probably derived from the stomach; if it has a fæcal odour on the other hand, then the tympanitic note is caused by a distended portion of bowel. If we examine the patient some time after the perforation, when there is already much peritonitis, then the presence of tympanitis has lost a good deal of its diagnostic value.

Another feature of the tympanitis due to the presence of air in the peritoneal cavity is the shifting of the tympanitic note with the alteration of the position of the patient, the air always rising to the surface, and thus causing the highest point to be tympanitic on percussion. This symptom, however, is only present when the extravasation of air is very great, and when there are no adhesions; moreover, as it is essential, where perforation is suspected, that the patient should be kept perfectly quiet, such a method of examination cannot be recommended. The same may be said of *succussion*, which some authors believe to be constantly present, when, besides air, the fluid contents of the stomach have extravasated.

(4) *Vomiting*, which is so often seen in ordinary peritonitis, is almost invariably absent in perforation of the stomach. In none of the cases I have observed has there been vomiting, and its absence has also been especially noticed by Traube, Ebstein, and others. The explanation is by no means difficult, for, in the act of vomiting, though the stomach does not take an active part, the diaphragm does, and the abdominal muscles also come into play, and the contents of the stomach are expelled into the peritoneal cavity, rather than vomited. It is also highly probable that the air in the peritoneal cavity, intervening between the diaphragm and the abdominal walls, on the one hand, and the stomach, on the other, interfere with the action of these muscles, and thus prevent vomiting. I have however noticed, in several cases, retching and eructations. The bowels are generally confined, though not obstinately so, and in several cases diarrhœa existed.

(5) Soon after perforation is established, signs of peritonitis appear: one of the first and best marked is an alteration of the respiration—partly owing to the displacement of the diaphragm, partly also to the commencing peritonitis, we have the more or less costal type of respiration—the diaphragm moving but slightly.

This symptom was well marked in three cases which I had an opportunity of seeing very early after perforation. The pulse gradually quickens, soon reaches 100, 120, and with the increasing collapse reaches 140, and more, and becomes small, thread-like, and running. The temperature, even where we find after death extensive peritonitis and exudation of lymph, remains normal, or only rises slightly, to fall again below normal with the commencing collapse. At the same time, we notice cold, clammy perspiration; the features become pinched; the abdominal pain lessens, and the patient quickly becomes collapsed—consciousness, however, remaining up to the last.

I need scarcely say that most cases of perforation of the stomach end fatally. I have not been able, though looking over many cases, to make out the exact proportion of fatal ones. As far as my own observations go, of ten cases, two recovered, one lingered on for ten days, one for five days; while six died within two days after the onset. We may assume that all those cases end fatally where the opening is large, and where there are no adhesions, and where, besides air, the ingesta pass into the abdominal cavity; where, however, the opening is small and valve-like, we may have occlusion of the opening, and, though the patient may often succumb after a few days from peritonitis, or from a re-opening of perforation, yet in these cases we may have occasional recovery.—*Medical Chronicle, Nov.* 1887, *p.* 89.

26.—ON THE DIAGNOSIS OF PERI-CÆCAL INFLAMMATION.

By William Pepper, M.D., Professor of Medicine in the University of Pennsylvania, Philadelphia.

The appendix presents evidences of disease in a very large number of indifferent autopsies. I remember the report of a series of three hundred autopsies, in which there were signs of disease of the appendix in thirty-three per cent., although in none of these was there a history of typhlitis. We have this little organ, singularly useless physiologically so far as we know, placed in a singularly unfavourable position anatomically, very liable to become impacted, so formed that escape of its contents is very difficult, and very prone to become diseased. We must recognise the fact that the appendix is often diseased when we have no reason to suspect such a condition. I cannot agree, however, that the cæcum also is not often the seat of disease. I have collected a number of instances of independent cæcal disease, where the cæcum alone presented lesions; sometimes going on to chronic inflammation, ulceration, and perforation. The real condition of things seems to be this. In the first place, there are many cases of mild appendicitis which cannot be recognised during life; in the second place, there are a considerable number of cases

of typhlitis where the symptoms are chiefly due to inflammation of the walls of the cæcum and of the peri-cæcal connective tissue, which end in recovery. It is impossible in these cases to determine what proportion has been due to appendicitis. Finally, there are also a good many cases of severe appendicitis resulting in ulceration and perforation, with the formation of circumscribed abscess or of general peritonitis. If we could accept the view that perforation of the appendix, leading to peri-typhlitis or para-typhlitis often resulted in recovery by resolution, it would be a matter of comparative indifference where the lesion was chiefly situated; but do clinical experience and anatomical records justify the view, that perforation of the appendix, followed by peri- and para-typhlitis often ends in resolution? It is true that I have found one specimen and that others have been placed on record where perforation of the appendix has not been followed by grave results, but do these amount to anything comparable with the great mass of cases where lesions of the appendix have occurred with peritonitis and fatal result unless relieved by operation. We have to recognise that while in typhlitis, peri-typhlitis, and para-typhlitis, in all probability appendicitis always exists, yet it is often present in only a very mild degree, and can cause only a small portion of the symptoms. This conception seems necessary to a correct diagnosis of these lesions; and it is necessary in guiding our treatment.

There appear, then, to be two classes of cases. In one the affection is more limited to the walls of the cæcum and the peri-cæcal connective tissue, and the appendix is affected to a comparatively slight degree. We have no record as to the frequency of such cases. The record is not to be sought on the post-mortem table, for the large proportion of these cases, if properly treated from the beginning, end in resolution. I have the records of scores of such cases, the vast majority of which ended in resolution. These cases are marked by pain as the initial symptom, not excruciating in character, not associated with evidences of collapse, often accompanied by nausea and vomiting, and with elevation of temperature, which continues to rise until decided fever is present. With these symptoms there is excruciating tenderness in the right iliac fossa, a sense of fulness and induration, not rarely with dorsal decubitus and flexed thigh, with a constipated condition of the bowels, possibly preceded by one or two irritative movements during the first day, and with these there is considerable acceleration of the pulse. In proportion as the induration and swelling are early and marked, the chances are that the appendix is not seriously involved, but that the affection is chiefly one of inflammation of the walls of the cæcum and of the peri-cæcal connective tissue with exudation, and usually accompanied with considerable fæcal impaction of the cæcum.

If absolute rest be insisted upon, if abstinence from food and

absolute avoidance of interference with the state of the bowels be adhered to, if local depletion be employed, if counter-irritation followed by the application of the ice-bag, or warm fomentations be employed, and if the internal use of opium and mercury be begun early, the vast majority of such cases terminate in resolution and complete recovery, if the convalescent is properly treated—that is, if these restrictions be insisted upon until the sensibility of the part is entirely removed. The well-known tendency to the recurrence of typhlitis is largely dependent upon the management of the convalescence from the primary attack.

On the other hand, we know very well that such cases not rarely go on without resolving, that the induration extends, that the symptoms become aggravated and possibly are such as to indicate suppuration, and that at periods varying from seven to fifteen days pus formation occurs. Such cases demand operative interference, and are successfully treated by the Parker operation. The existence of pus can often be demonstrated by exploratory puncture with a fine aspirator needle.

There is a second class of cases of an entirely opposite character, with which we are all equally familiar. Here the patient may apparently have been in almost perfect health, for perforation of the appendix may occur without any previous symptoms of which the patient had complained. But in these cases there has been a catarrhal appendicitis ; the fæcal matter which is present in nearly every healthy appendix, is no longer able to circulate and escape, because the outlet is partially closed by the swelling of the mucous membrane ; the pent-up secretions and the irritating fæcal matter excite more serious inflammation in the walls of the appendix ; ulceration is established, and, finally, perforation occurs, and the symptoms of the attack begin. I have rarely seen a fatal case of disease of the appendix where there was not stenosis of its orifice, and I think that, to a large extent, it is this tendency to closure, and the accumulation of the secretions and of fæcal matter, that causes the most serious type of inflammation and the occurrence of perforative appendicitis.

The first symptom in these cases is usually intense and excruciating pain, so severe at times as to cause collapse, occasionally so severe as to be followed by death in a few hours. Following this there is the rapid development of the signs of peritonitis. The pulse becomes frequent. There is marked tenderness, not in the iliac region only, but also towards the middle of the abdomen. The belly becomes distended, but there is no induration to be felt; there may even be no fulness in the right ileo-cæcal region. The appendix often lies under the cæcum, and he has frequently percussed these cases with great care without finding any evidence of dulness or of induration. After the occurrence of the initial pain, the fever may not rise very rapidly. There may be only moderate

febrile reaction for one, two, or three days, associated with continued, moderate pain simulating an ordinary catarrhal attack with intestinal colic. For two or three days these cases may be viewed as not being seriously ill, so delusive may be the symptoms after the subsidence of the initial pain. In these cases there is absence of ileo-cæcal infiltration, or induration, or tumour, or prominence, or dulness on percussion. There is in these cases a less degree of vomiting than in the first class of cases mentioned. The vomiting is often rare, and only induced when the stomach is taxed. The bowels are quiet, but not so obstinately constipated and not so strongly resistant to the action of laxatives as in typhlitis, with more more or less impaction of the cæcum. After a time, which varies with the intensity of the attack and the direction which the exuded matter has taken, there appear the symptoms of a rapidly spreading, general peritonitis. The belly becomes greatly distended and tender, the coils of intestine are outlined through the tightly stretched skin. The vomiting becomes frequent, the temperature rises, the pulse grows thready and rapid, and we have the familiar signs of general peritonitis. These cases end fatally, from exhaustion, in from five to ten days.

Here are two groups of cases which seem to differ not only in degree, but also to differ in the seat of their lesion and the character of that lesion. I cannot believe that in any great number of cases of the first group there is perforation of the appendix. Yet, unless perforation is present, we have seen that all the other lesions of the appendix may exist without the production of any symptoms. Therefore, I cannot attribute to ordinary appendicitis the symptoms of peri-cæcal inflammation which mark the first group of cases. These symptoms we must assign to the inflammation of the walls of the cæcum and of the peri-cæcal connective tissue in chief part.

It is, therefore, of momentous importance that we should be able to diagnose the sort of case that we have to deal with, and at the earliest moment. I should say that in proportion as the tumour, prominence, induration and dulness are marked, delay is safe, especially if rectal examination does not indicate any fulness on the right side of the roof of the pelvis. If this is present, it indicates an amount of exudation which will end in abscess, and is a strong indication for operation. If digital examination, pushed if necessary to the extent of the introduction of the whole hand reveals no fulness in the roof of the pelvis, delay for several days is justifiable, and with such treatment as indicated, the symptoms will, in the majority of cases, subside; and, although the case is fraught with great anxiety, resolution will begin, the symptoms will become milder, and the patient recover, and under proper treatment the part will be restored to absolute health without relapse. Even if frequent relapses occur—and I have seen as

many as fifteen or eighteen in the same individual—complete recovery may follow a protracted course of treatment with absolute rest, rigidly restricted diet, constant counter-irritation, and suitable alterative treatment internally.

Of course if, after waiting a few days, there is no evidence of the commencement of resolution; if the fever is sustained, particularly if it assume a hectic type, we know from experience that suppuration will not be long postponed. Exploratory puncture should be made, and operation should follow without delay.

The most important question to be considered is, What is the earliest moment at which we can establish the diagnosis? The initial symptoms give us some indication of the seat and the gravity of the attack. Typhlitis and peri-typhlitis soon offer demonstrable symptoms, but as the appendix is hidden under the intestine, the symptoms of perforated appendicitis are often obscure for two or three days. The most careful palpation may fail to show the slightest fulness. The patient may complain of pain over the cæcum, or over the hypogastrium. External examination does not aid us in the diagnosis. Are there any special features which will help us? I would again refer to the importance of the rectal examination. Early and oft-repeated rectal examination is the most important diagnostic means we possess in this class of affections. Often, on opening the body after death, there is no appearance of peritonitis in the exposed coils of intestine. There is no inflammatory process seen outside of the cæcum, and nothing is found until the cæcum is lifted up, when it is discovered that the inflammation is behind it, and extends downward to the pelvis. Sometimes, on removing a layer of lymph, a pelvis filled with pus is disclosed. In such cases, if rectal examination should give a sense of distension of the right side of the pelvic roof, might not a puncture be made with a curved exploring needle introduced through the rectum? In this way we might demonstrate the presence of pus, when it would not be possible to do so through the external abdominal wall.

In many of these cases there has seemed to be an unusual abundance of urine and an increased frequency of urination. I think that the former is associated with the absence of vomiting. In typhlitis and peri-typhlitis, there is often so much vomiting that very little liquid is absorbed, and the urine becomes concentrated. I have seen cases of perforation of the appendix, where the urine was voided at intervals of an hour or an hour and a half, the total amounting to a large quantity.

Again, it has seemed to me that in perforation the pain is more apt to extend to the middle line of abdomen, and sometimes into the genitals, especially into the right testicle and spermatic cord.

The agony of pain which marks the initial lesion, the development of fever, the acceleration of the pulse, the distension of the

abdomen, the pain referred to some point in the ileo-cæcal region, the comparative rarity of vomiting, the absence of induration and tumour, possibly, the ability to detect fulness or induration in the roof of the pelvis by rectal examination, the frequent micturition with a free supply of urine, the pain possibly radiating in the direction of the genitals, have been, in the majority of cases, the most marked symptoms.

Suppuration occurs in these cases very early, even earlier than in the other group of cases. In one case in which Dr. Keen operated for me as early as the close of the third day, perhaps the earliest operation on record, a pint of pus was found in the pelvis.

The point to which we should bend our exertions should be to determine the early diagnostic symptoms of these two varieties of cæcal inflammation, to see whether there is a constancy in the description that I have given of the first type of inflammation of the walls of the cæcum which, under proper treatment, offers a considerable hope of recovery. We should, in particular, strive to point out the indications for operation in the two classes of cases.

I would ask if general peritonitis may not be a positive indication for instant operation. It has been asserted that general peritonitis is not a contra-indication to laparotomy under other circumstances. If this is the case, the development of general peritonitis in a case of inflammation of the cæcal region would at once indicate operation, for after this develops death results under medical treatment.—*Medical News, Jan.* 7, 1888, *p.* 22.

27.—ON THE TREATMENT OF RECTAL PAIN BY CONIUM.

By William Whitla, M.D., Physician to the Royal Hospital, and Consulting Physician to the Ulster Hospital, Belfast.

The object of this brief paper is to bring under notice the value of hemlock as a local anæsthetic in painful affections of the rectum and anus.

In pruritus ani, especially when associated with or caused by hemorrhoids, or fissures about the anus or in the lower part of the rectum, the physician or surgeon often finds much difficulty in giving relief. The pain and annoyance caused by a minute fissure is very often uninfluenced by cocaine, even when used as a strong solution, and if relief should follow it is seldom complete and is always of such very short duration that the patient will generally discontinue its use, preferring the misery of his ailment to the exacerbation of suffering caused by the application of the remedy.

Morphine, carbolic acid, creasote, belladonna, and the usual array of local sedatives, have been found in the hands of most observers to give very uncertain results in painful conditions of this region of the body. It will be perhaps the experience of most that they

have more frequently aggravated than relieved. Their application I have noticed when used to allay the pain of an inflamed pile has sometimes added a more distressing symptom—namely, itching.

It is a long time since conium has been recommended and used as a local anæsthetic; I had tried it when other remedies had failed, and with only such success as did not tempt me to persevere, in some cases the patients asserting that their symptoms were aggravated. About a year ago I noticed somewhere in our current medical literature very satisfactory reports of this drug from an American source, but I regret that I cannot recall the name of the physician or the journal. Having studied the action of conium some years ago on the endings of the sensory nerves, by applying a strong ointment made with the extract to ulcerated surfaces and painful excoriations and superficial neuralgias, I was led to believe that it had little or no influence upon the sensory terminals. Discovering, however, that the extract of the British Pharmacopœia is a most unreliable and generally almost inert preparation, I determined to try the effects of the *Succus*. Accordingly I have had an ointment prepared as follows:—

Two ounces of the pharmacopœial juice are placed in a small evaporating dish, and permitted to evaporate slowly at a heat under 150° F. till the bulk is reduced to about one and a half or two drams. This can be done by placing the dish on the top of an ordinary domestic hot-water cistern for twenty-four or forty-eight hours. The syrupy liquid is then carefully triturated with as much lanolin as will make the weight up to one ounce; the result is a perfectly smooth adhesive ointment of a light brown or dark fawn colour, and stable.

Happening to have several rectal cases in which severe pain and torturing pruritus were prominent features the ointment was carefully applied. One was a case of multiple small fissures accompanied with intolerable itching; another was associated with severe tenesmus and excoriations from the pus, flowing from an iliac abscess bursting through the *levator ani* muscle and penetrating the rectal walls; another was complicated by a bleeding villous growth. These with two cases of hemorrhoids, one of which had an ulcerated surface, were so markedly and speedily relieved by the conium ointment after nearly every known remedy had failed, that I was surprised at the result.

In a considerable number of cases during the last year the same highly gratifying success was achieved by this remedy, whilst I cannot recollect a single instance where the ointment caused inconvenience. It should be freely smeared *inside* the sphincter, and owing to its adhesive quality can be carried a considerable distance up the rectum by the introduction of the fore-finger of the patient.

I have never noticed after its use the serious drawback which

follows the prolonged application of every other greasy application to this region, namely, a tender, sodden, or raw state of the skin about the margin of the anus.

The ointment appears to me to paralyse the endings of the *motor* nerves distributed to the fine muscular layer under the surface of the mucous membrane; the reflex twitchings of this layer keep up the perpetual pain and uneasiness in diseases of the rectum and anus associated with abrasions, ulcerations, or fissures.

At the same time it undoubtedly paralyses the sensory filaments. I have obtained relief from its use in vaginismus and some painful conditions of the male urethra, and find it a good lubricant for the sound or catheter.

To the ointment prepared according to the above formula there may be added 10 or 12 grains of the persulphate of iron as recommended by Mr. Cripps in fissure. From carefully watching the results of this combination of conium with iron I am certain that it should have a trial before resorting to the knife or cautery. I have seen a fissure heal completely under its use. In acute inflammation of hemorrhoidal growths associated with swelling and painful throbbing some relief may be obtained by the free application of the conium ointment without iron, but it is in those exquisitely painful fissures or conditions where there is a loss of substance in the mucous surface that this remedy will be found to give more relief than any other drug.—*Practitioner, April*, 1888, *p.* 250.

28.—ON THE VALUE OF RESORCIN IN SOME GASTRIC AND CUTANEOUS DISORDERS.

By Edward Mackey, M.D., M.R.C.P., Assistant Physician to the Sussex County Hospital, Brighton.

Chemically related to carbolic acid, and probably acting in a similar manner as a stimulant and disinfectant, resorcin has the advantage of being less irritant to taste and smell, as well as to mucous membranes, more readily eliminated and less liable to cause toxic symptoms. The name has a curious origin, its first syllable, "res," representing its discovery in the resin of galbanum (fused with potash), and "orcin," referring to its isomerism with that litmus-derived substance. Hence Barth of Vienna compounded the word "resorcin," otherwise "resorcenal," known more precisely as "di-phenol," or "meta-di-oxylbenzene"—isomeric with hydroquinon, and with pyro-catechin $C_6H_4(OH)_2$, two atoms of hydrogen in the carbon nucleus being replaced by two of hydroxyl. It is now obtained from benzol and several other allied substances, in white, feathery, neutral crystaline needles and plates, soluble in water, alcohol, ether, and oils, not in chloroform. A good account of its chemical alliances will be found in Brunton's Pharmacology.

As to its *external* effects, we know that a 1 per cent. solution will retard, and one of 2 per cent. will arrest fermentation, coagulating albumen. These strengths do not irritate the skin, but stronger solutions have a more or less irritant, and even caustic, effect. *Internally*, five-grain doses are readily taken in any simple vehicle without gastric irritation, and though the taste is harsh, it has been considered, by contrast with some other medicines, pleasant enough by many. I have not required to give larger doses, but in reports of the effects of from twenty to thirty grains we find resemblance to the effects of alcoholic and other stimulants—e.g., quickening of pulse, flushing, giddiness, and tinnitus, afterwards sweating and depression of temperature, increased secretion of saliva and of tears; dilatation of vessels and dyspnœa have also been described. Dr. Murrell, by giving thirty grains to an asthmatic patient, relieved the spasm, with induction of sleep and no ill effect; but after sixty grains there occurred giddiness, headache, and nerve excitement, followed by prostration and collapse, with temporary unconsciousness. In other cases paralysis has been noted, and in those of Dujardin-Beaumetz, convulsion and other evidence of profound impression on nerve centres, as after toxic doses of carbolic acid. It is for such an impression less in degree, and also for lowering high temperatures, that the drug was early used, and we have numerous reports of more or less success from it in enteric fever, erysipelas, pneumonia, intermittents, &c. From these, which are mostly in continental journals, the antipyretic power of full doses is evident; but what is less evident is any real advantage conferred by this temporary effect. It is not, therefore, in this direction that I have made my observations; nor again, have I used it as a systemic disinfectant or "anti-zymotic;" but being impressed with the reports of its power in the local disinfection and healing of wounds, and discharging cutaneous and mucous surfaces, including that of the gastro-intestinal tract, I have carefully watched many such cases treated with it, and desire to place some results before the profession, being satisfied that we have in this drug a valuable adjuvant. The probability of this is suggested by the known good effects of creasote and carbolic acid, both of which have had, not without foundation, enthusiastic advocates of their power in gastro-intestinal catarrh, &c. It seemed to me that if we could have either of these so modified as to be better tolerated by the stomach and nervous system, we could hope for still further advantage; and I was quite prepared to accept the favourable reports of Andeer as to the value of resorcin in gastric ulcer, and to take an early opportunity of verifying them. The following case, the first in which I prescribed the drug, may be related in some detail as a type of others.

A. G——, lady's maid, single, aged twenty-five, came for advice on Dec. 7th, 1885, having that day brought up half a teacupful of

dark blood; she stated that more or less had come up at intervals during the past six or eight months, whilst she had been subject to severe epigastric and interscapular pain, made worse by food, of which she could take but little. Nausea was frequent and distressing; she was anæmic and giddy, thinner and weaker than formerly; menstruation was irregular, and had just occurred after two months' interval. She had night sweats, and frequently a cough, but this had no definite relation to the bleeding, and there were no physical signs of chest disease. The epigastrium was extremely tender. She showed a prescription for the medicine then being taken—bismuth, soda, and aromatic bitters; also one of acid glycerine of pepsin. She had been under competent medical treatment with similar remedies in Clifton for the last six months,with only temporary relief. Her mistress, aged eighty, had come to Brighton for the season as usual, to a house four or five storeys high, and the present relapse of hemorrhage was fairly attributed to unusual fatigue of stairs, &c. I ordered more rest, small quantities of peptonised food, and five grains of resorcin in glycerine-and-water thrice daily. On Dec. 15th she reported herself much better; there had been no bleeding and scarcely any pain or sickness till the previous day, when some relapse followed extra work and worry consequent on her mistress's sudden illness. She volunteered the statement that she felt more relief from this than from the other medicines; could now take fish and some solids without pain. She was ordered to continue the resorcin, and to take an occasional pill of cerium oxalate for the special symptom of vomiting. She went on well for about a week, when the mistress was taken ill again in the night, and the girl had to wait on her for many hours at a time, going much up and down stairs. The following evening I found her very prostrate, with a stream of semi-clotted blood flowing from her mouth, whilst a quantity had been vomited. For the moment the necessity was to arrest hemorrhage. Ice was therefore given, and a disc of sclerotinic acid by the mouth and another by the skin; afterwards a few doses of acid and opium. Next morning the resorcin was resumed. With more care as to rest and diet she steadily improved and gave no further anxiety. In three days she was up; in a week she was again able to take solids and to go out; and in a fortnight she travelled back to Clifton, continuing steadily the same remedy. She improved in health in all respects, and when I saw her again during last season she had had no relapse and considered herself strong.

Other cases of gastric ulcer or catarrh, of which I retain sufficient notes to justify a conclusion, are seventeen in number, presenting varying degrees of chronicity and severity. If I say they were all women but one, and all hospital patients, it will sufficiently recall the class of cases so frequent amongst the poor in out-patient departments, with such symptoms as pain, pyrosis,vomiting,

distension, and all the consequences of imperfect digestion and of fermentation of food. Most of the patients had taken also at various times bismuth, prussic acid, alkalies or acids, rhubarb, &c.; and only one of them—a women at the climacteric period—failed to attribute decided benefit to the resorcin and to ask again for it. I may add that I have met with no drawbacks in its use, such as causing pain, vomiting, or constipation; in a few cases, however, when giddiness might have been due to it, I have lessened the dose to three grains; the usual one was four or five grains in one tablespoonful of chloroform water, to which plain water would be added. The accompanying brief table gives the ages, &c., of the cases referred to, and I will reserve for another paper observations on the local use of the same drug in some cutaneous disorders, &c. —*Lancet, March* 24, 1888, *p.* 570.

29.—ON HEPATIC CIRRHOSIS IN CHILDREN.

By R. Palmer Howard, M.D., LL.D., Professor of Medicine in McGill University, Montreal.

[Dr. Howard relates two fatal cases of cirrhosis occurring in a sister and brother, aged respectively nine and ten years, and then proceeds to a review of 63 other cases which he has collected.]

The symptoms of hepatic cirrhosis in children are identically those of the disease in the adult. I shall speak very briefly upon a few of them. In the two examples seen by the writer, there were present on the face stigmata composed of collections of dilated minute venules. Although they have been spoken of by some few authors, they are rarely alluded to in systematic descriptions of cirrhosis, and are mentioned but once in the records of the other cases, 61 in number, which I have collected and studied. Their presence should suggest an examination of the liver with special reference to the probable existence of cirrhosis.

The opinion commonly held by the profession is that cirrhosis of the liver is a non-febrile disease, yet in 10 out of 52 cases uncomplicated by other affections that might produce pyrexia, cirrhosis was associated with fever; that is, in 19·2 per centum. The same association obtained in five other instances in which either simple or tuberculous inflammation complicated the cirrhosis and may have produced the pyrexia. Dr. R. E. Carrington, who has recently drawn attention to this circumstance, found an irregular febrile temperature present in 18 out of 44 cases of cirrhosis, or in 43 per cent. (This list includes seven children's cases.) It would not, however, be safe to conclude from these figures that cirrhosis is less frequently associated with a febrile temperature in children than in adults; for the records of many of these are altogether devoid of details on this point. Of these 10 febrile cases of uncomplicated cirrhosis, 4 presented the hypertrophic form, 4 the atrophic, and 2 had normal sized livers.

In the 56 cases of non-syphilitic cirrhosis, ascites existed in 34; it was absent in 8, and it was not mentioned in 14. It is interesting to note that in the 13 instances of hypertrophic cirrhosis ascites was absent but twice, not mentioned twice, and present, contrary to the opinions of some authors, 9 times. On the other hand, abdominal dropsy was absent in 4 out of 19 instances of atrophic cirrhosis, in which it is thought to be rarely wanting, present in 14, and not mentioned in 5 cases.

Icterus, more or less deep, was present in 23 cases, absent in 12, and not mentioned in 21 of the non-syphilitic group. These cases do not confirm Fagge's statement that where cirrhosis is associated with jaundice the liver is not contracted, as a rule, but is increased in size. For in the 13 hypertrophic examples jaundice was present 7 times, absent 3 times, and not mentioned 3 times; while in the 19 atrophic examples it was present 10 times, absent 4 times, and not mentioned 5 times. In other words, icterus coexisted with the hypertrophic form in 70 per cent., and with the atrophic in 71·4 per cent.

One point more and I have done. The fatal issue of hepatic cirrhosis in children is brought about in many different ways; but there are three especially frequent, viz., by toxæmia, or certain disturbances of the nervous system, by peritonitis, and by asthenia, in the production of which hemorrhage plays an important *rôle*. These three modes of termination obtained respectively in 12, 9, and 8 instances. Pneumonia seems to have been the immediate cause in 3 instances. The following affections held the same relation respectively in one instance: pleuritis, pulmonary congestion, tuberculous meningitis, ulceration of the entire colon, and "diarrhœa, with fits."

The toxæmic symptoms in these children, the subjects of hepatic cirrhosis, have been more especially violent fits of crying, and frequently of screaming, delirium, dilated pupils, stupor, tremor. twitchings, clonic or tetanic convulsions, rigidity, coma and hemorrhages from stomach, nose, intestines, or kidneys.

In conclusion, it results from this analysis of these 63 cases of hepatic cirrhosis in children—

1st. That most of the established causes of the disease in adults obtain also in children, more especially the use of alcohol, present in 15·8 per cent. of the whole number; syphilis, chiefly hereditary syphilis, present in 11 per cent; tuberculous disease of other organs than the liver, in 11 per cent.; also, but much less frequently than these, venous congestion of the liver, peritonitis, and a general tendency to connective tissue formation in the system.

2d. That syphilis occasionally tends to a diffuse interstitial hepatitis or cirrhosis, by first inducing an adhesive inflammation of the portal vein.

3d. That a general arterio-capillary fibrosis is not proved by these

cases to be the usual, and probably not even a frequent, cause of hepatic cirrhosis in childhood.

4th. That more than half of the cases of hepatic cirrhosis in children do not appear to be produced by the above-mentioned well-established causes of that affection.

5th. That there is some evidence that cirrhosis of the liver may be very exceptionally induced by the acute infectious diseases—cholera, typhoid fever, measles, scarlatina, but that proof of this is wanting.

6th. That the habitual use of a stimulating diet, or the absorption of the products of faulty digestion, are probably fruitful sources of hepatic cirrhosis in children.

7th. That it is in harmony with what is known of the causes of hepatic cirrhosis to believe that the bodies known as ptomaines may be capable of exciting a cirrhotic condition, and that investigation of this subject deserves attention.

8th. That the period of childhood most liable to cirrhosis of the liver is from the ninth to the fifteenth year inclusive, but that it may be congenital and may occur at any age after birth.

9th. That it is twice as frequent in male children as in female.

10th. That its symptoms are essentially the same in childhood as adult life.

11th. That it is frequently accompanied by pyrexia.

12th. That ascites or icterus, and frequently both together, are of common occurrence in the atrophic and the hypertrophic forms.

13th. That the group of symptoms which have been referred to cholæmia or to cholesteræmia or to acholia, and even sometimes to uræmia, frequently ushers in the fatal issue of hepatic cirrhosis in children.—*International Journal of Med. Sciences, Oct.* 1887, *p.* 360.

30.—ON THE DIETETICS OF THE GOUTY STATE.

By William H. Draper, M.D., Professor of Clinical Medicine in the College of Physicians and Surgeons, New York.

It is a common belief that gout is largely the result of excessive ndulgence in animal foods, and yet, as has been already remarked, there is no more conspicuous characteristic of gouty persons than their feeble capacity for the digestion of the carbohydrates and their derivatives. It is a fact of daily observation that the disorders of digestion, with all the attendant derangements which belong to the gouty diathesis, are especially determined and aggravated by the too liberal use of sweets, starches, wine, and beer. It is the recognition of this feeble capacity for the conversion of the carbohydrates, which, I believe, suggests the guiding principle in the regulation of the diet of gouty persons. It is important to note that this is in diametric opposition to that regulation of the diet which is based upon the theory that uric acid is the essential

cause of gout. This theory makes the exclusion of nitrogenous foods the special feature of an anti-gouty diet. But while a diet largely composed of carbonaceous foods is opposed to the generally accepted theory of gout production, I believe that clinical experience amply demonstrates that it is the most efficient cause of the lithæmic state and the protean miseries of the gouty diathesis.

More than fifteen years ago while studying the relations of the benign form of glycosuria to gout, I was impressed with the frequent association of the saccharine disease with the characteristic symptoms of the acid dyspepsia of gouty subjects, and not only this but with the actual correlation of gout and diabetes in different members of gouty families and frequently with the association of the two diseases in the same individual. I was led to this observation largely by the impressive lectures of Bence Jones on the "Applications of Chemistry to Pathology and Therapeutics." A large clinical experience has confirmed me in the belief that the theory of suboxidation explains better than any other the etiology of glycosuria and gout, and that in both these diseases the consequences of defective oxidation are first and most markedly observed in the digestion of the carbo-hydrates.

I have thus referred to glycosuria as belonging to the family of gouty diseases because the diet which is prescribed for this malady represents the extreme degree to which it may be necessary to carry the exclusion of non-albuminous foods in some forms of gouty disease. If we consider the ordinary anti-diabetic diet we find that the order in which the non-nitrogenous elements are excluded in glycosuria is first the sugars, including fruits, wine, and cider, and secondly, starches, including beer. The same order has often to be observed in the regulation of the diet of gouty persons. The intolerance of sweet desserts, of fruits, raw or cooked, and especially of wine, is one of the most frequent indications of this diathesis, and in decidedly gouty persons indulgence in these articles of diet is pretty certainly followed by the characteristic dyspeptic symptoms, or by some of the nervous disturbances which I have mentioned. It is not uncommon for gouty persons to present special idiosyncrasies in regard to certain articles of diet of this class. This is notably true of particular varieties of wine and fruits, muscular and articular pains and even articular inflammation being promptly provoked by them.

The intolerance of considerable quantities of farinaceous foods and beers, while perhaps less marked than that of sweets and wine, is still often a pronounced characteristic of gouty subjects. They give rise to indigestions, which are especially apt to be accompanied by mucous catarrhs and cutaneous eruptions. The evil effects of excessive quantities of farinaceous foods are often observed in the children of gouty parents, in whom they engender an

abnormal accumulation of fat, catarrhal affections, eczemas, and not infrequently lithæmic neuroses.

While the restriction of starchy foods seldom requires to be so absolute as that of sweets in the diet of gouty disease there is no question as to the value of their complete exclusion in certain cases. The strict enforcement of a purely nitrogenous diet in some cases of rheumatoid arthritis, and especially in aggravated forms of gastric catarrh, is unquestionably a therapeutic measure of conspicuous value. The utility of a diet of meat in these cases has met with a certain degree of popular recognition through the the success of the so-called "Salisbury treatment," and this very fact has perhaps retarded a more general acceptance of its value by the profession. My own experience has furnished many examples of chronic arthritis, gastric catarrh, and lithæmia which have proved rebellious to all treatment while farinaceous foods were allowed to form an element of the diet. The cases, I think, are few where it is necessary to exclude them entirely, but I am sure they are very numerous where the greatest benefit is derived from reducing them to a moderate amount of bread, and allowing a variety of animal food and green vegetables. The hydrocarbons, butter, cream, cheese, nuts, marrow, and the fat of meats may be allowed in moderation, and serve to replace the carbohydrates in an ordinary mixed diet.

As the most pronounced peculiarity of the victims of the gouty diathesis is the prompt reaction which they present to wine and beer, it follows that the exclusion of these beverages, as articles of diet, must be insisted upon. This is often a difficult injunction to enforce. There is so strong a popular and professional prejudice in favour of fermented liquors as articles of diet that one can hardly prohibit the use of them, under any circumstances, without being regarded as a crank. In spite, however, of the generally received opinion that ardent spirits are responsible for all the physical evils of intemperance, I have long been inclined to believe that the fermented preparations of alcohol are equally if not more productive of functional derangements, and even of structural lesions. Certainly, if alcohol is allowed at all, very dilute spirits or dry champagnes are the only forms, as a rule, which victims of gout can use with impunity.

I would also repeat the caution which I have suggested in regard to fruits. I believe it is often very important to insist upon the exclusion of fruits from the diet of gouty persons. This is another injunction which is so opposed to popular and even professional sentiment that it is frequently difficult to enforce it.

I have thus sketched very briefly, the principles which I believe should guide us in regulating the diet of persons presenting the general features of the gouty diathesis. There are many details in this regulation based upon the more or less pronounced intensity of

the diathesis, upon its particular manifestations, and upon the special idiosyncrasies which gouty persons exhibit in regard to certain articles of diet which are very important and which necessarily make each individual case a study by itself. These details I have not time to consider. It will be observed that the general principles which I have stated are based upon the recognition of the fact that gouty subjects have a limited capacity for the digestion, and conversion into the different forms of vital energy, of the carbohydrates. There seems to be no better way of expressing this cardinal peculiarity. How this departure from what has generally been regarded as the primitive habits of man as a vegetable feeder, has been brought about, it is not our purpose now to inquire. I would simply remark in regard to this point, that it is probable that the exigencies of modern civilized life have come to demand a finer adaptation of diet to occupations and mode of life than has hitherto been considered necessary or practicable. The relations of food to work, or to the diverse developments of human energy, and the regulation of diet according to special physical defects, constitute some of the most interesting and important problems that can engage our attention. Science has long since arrived at some definite conclusions on these questions in their application to the training of athletes, the animals which serve and amuse us, but beyond this it has not shed much light. It may be said, however, that it is probable that the carbohydrates are the foods best adapted to the evolution of the greatest and most prolonged muscular energy, and that they are most perfectly consumed and in the largest amount by those whose lives are spent in mechanical work and under favourable conditions in the open air. There is also good reason to believe that brain workers, and those whose lives are passed indoors, and in more or less physical indolence, require, for the best development of their energies, a diet that is rich in albuminous foods.—*Philadelphia Medical News, Feb.* 25, 1888, *p.* 204.

SURGERY.

AMPUTATIONS, FRACTURES, DISLOCATIONS, AND DISEASES OF THE BONES, JOINTS, ETC.

31.—TREATMENT OF SPINAL DISEASE BY CONTINUOUS EXTENSION IN THE HORIZONTAL POSITION.

By William James Fleming, M.D., Surgeon to the Royal Infirmary, Glasgow.

Sayre, in recent years, has familiarised all surgeons with the great benefit of extension, with more or less fixation, in diseases of the vertebral column. It is now very generally admitted that many cases are not suitable for any of the varieties of "jacket-treatment." Frequently, nothing short of the maintenance of the absolutely horizontal position will suit the case, and the improvement under this *régime* is slow, and only sometimes takes place at all. Besides, in many instances, notably with children, it is almost impracticable to carry the method out. I have had it in my mind for some years that, if we could add continuous extension of the vertebral column to the horizontal position, great benefit would accrue. A case (No. 1) presenting itself in November, 1886, I proceeded in a crude way to try the method, and was so much encouraged by the results that I have treated all suitable cases since then upon this principle, with, I consider, satisfactory success. The many excellent results obtained, both in my own hands and in those of others, by the application of the same general principle, by means of my inflating collar, pointed to the correctness of the method, and it only remained to elaborate the details of the appliance. I happened to mention my idea to Mr. Hilliard, the surgical instrument maker of this city, who informed me that he also had been at work in the same direction, and I have gladly availed myself of two of his suggestions—viz., the interposition of an elastic cord at the head and the method of extension from the pelvis by a single band from the sacral region—ideas which, he informs me, he has patented.

The apparatus is very simple, and can be easily understood from the cut. It must be borne in mind that elastic tension, constantly exercised upon living tissue, has an effect altogether disproportionate to what one would primarily expect from the amount of actual force employed. So that very slight traction, but continuous, is what we aim at. (See Fig. 1.)

The arrangement I now adopt consists of a strong elastic cord, six inches to a foot in length, one end of which is made fast to the top of the bed, and the other to the centre of a piece of wood

rather longer than the greatest diameter of the head. The head stall—made after the pattern of the one used for suspension in Sayre's method, but of chamois or other soft leather, and rubber tubing in place of side straps—is connected to the ends of this wooden yoke. A broad towel is tightly pinned or sewn round the pelvis, and to this, in the middle line behind, is firmly attached the end of a piece of strong calico bandage. The other end of this is tied, at about the level of the feet, to the cord passing over the common extension pulley at the end of the bed, and a weight, proportioned to the body weight of the patient, put on. The bed is covered with a macintosh sheet freely dusted with powdered boracic acid, and the arrangement is complete. It will be seen that, while the whole spinal column is thus acted upon by the extensile force, the arms and legs are quite free, and the patient can turn round and lie on the back, face, or either side at will, without for a moment relaxing the extension. The object of the smooth vulcanised rubber sheet is to reduce the great friction between the body and the rough surface of the sheet, which it was found entailed a considerable increase of weight.

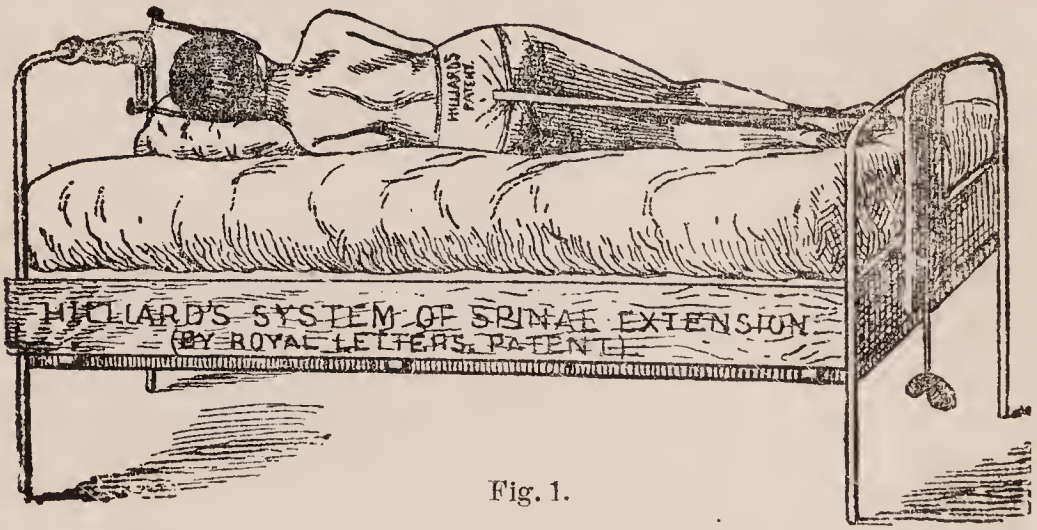


Fig. 1.

In the majority of cases in which pain h as previouslyexisted it is almost immediately relieved. The patient experiences a sense of comfort; sleep and general condition improve. In some cases —indeed, where attainable, probably in nearly all—the use of massage and electrical stimulation of muscle is advisable, and can be employed without even momentary interference with the extension. In many cases it is advisable, after the cessation of all symptoms under this treatment, to make the patient for some time wear a poroplastic or other jacket, or, in cases of disease of the upper part of the spine, my pneumatic collar or Hilliard's pelvic jurymast.

[Dr. Fleming gives short notes of seven cases treated in his wards by this method, but we can reproduce only two of them.]

Case 1.—J. L., æt. 29. 30th November. Disease of 7th, 8th,

and 9th dorsal. Treated six years ago in Edinburgh Infirmary with plaster jacket. Able to work for four years. About a month ago, while walking on the street, felt as if the bones of the spine were "slipping off each other." Since then, quite helpless; unable to stand without support. Pulmonary condition far from satisfactory—a suspicion of phthisis. Was treated by extension; dismissed in six weeks apparently quite well, but advised to wear a jacket. He reported himself some months afterwards quite well, as far as spine was concerned. I have since heard of his death from phthisis.

Case 2.—W. W., æt., 22. 10th February.—Spinal disease of traumatic origin treated by extension. 6th April.—Plaster jacket put on, and dismissed. 5th July.—Reported himself quite well; can walk five miles without fatigue.

Fig. 2.

Postscript.—Since writing the above, an improved form of head-piece has been devised, as shewn in the second figure.

It consists of a strap or piece of stiff webbing, passing from just above and in front of the ear, round the occiput to a corresponding point on the opposite side.

The ends of this are united by a similar strap, with a buckle riveted or stitched at the proper angle to permit it to pas horizontally across the forehead, just above the orbital prominences. Traction taken from a little in front of the junction of these two straps pulls in the axis of the spine, and may be employed to any extent without fear of slipping, if the apparatus is accurately fitted to the individual head.

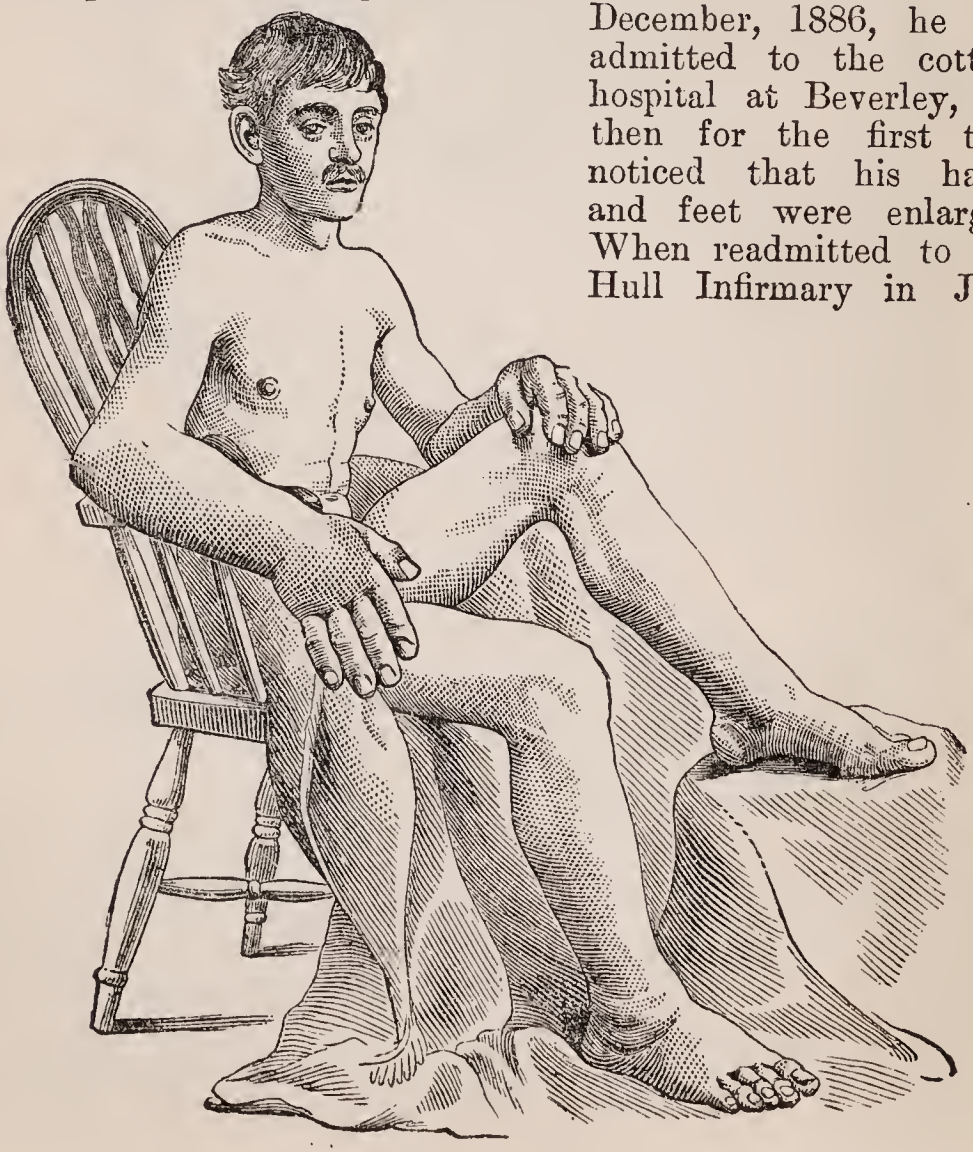
This arrangement, by leaving the jaw free, greatly increases the comfort of the patient.—*Glasgow Med. Journal, Nov.* 1887, *p.* 324.

32.—ON A CASE OF MULTIPLE SARCOMA ASSOCIATED WITH OSTEITIS DEFORMANS.

By George F. Elliott, M.D., F.R.C.P., Physician to the Hull Royal Infirmary.

I am indebted to my colleague Mr. Howlett for the accompanying photograph, which faithfully represents the condition of a patient of mine recently in the Hull Royal Infirmary, who was suffering from the above-named diseases. As regards the appearances presented, it is, I fancy, in all probability, unique.

G. S——, aged twenty-seven, an agricultural labourer, had a good family history, and had not been the subject of syphilis. He had always enjoyed good health until February, 1886, when he began to feel pains in his knees and shoulders. He was for a short time a patient in the Hull Infirmary, in October, 1886; there was at that time no observable deformity, and as occasionally happens, it seems, in these cases when in an incipient stage, the complaint was thought to be of a rheumatic nature. In December, 1886, he was admitted to the cottage hospital at Beverley, and then for the first time noticed that his hands and feet were enlarged. When readmitted to the Hull Infirmary in June



of last year, he presented the following symptoms. Upper extremities œdematous from the finger-ends as far as half-way up the humerus. The enlargement, however, was manifestly only partially due to œdema; all the phalanges, the metacarpal bones, and the radius and ulna could be felt distinctly thickened. In the lower extremities the swelling extended from the toes to the knees, and the latter joints were enlarged. Here also the increase in size of the limbs could be felt to be partly due to œdema and partly to enlargement of the bones. The clavicles and some ribs on the right side were thickened. There was pleural effusion over the lower half of the right lung. The eyelids were much thickened, and the skin of the face and back of the hands presented numerous small flattened nodules about an eighth of an inch in diameter. Over the trunk generally there was more or less hyperæsthesia of the integument. There was no albuminuria. The heart's action was regular and fairly strong, the apex beat was displaced to the left of its normal position, but there was no murmur. There were some enlarged glands in both groins. The temperature was generally raised, varying from normal to 100°; on two occasions, however, it reached 101° and 102° respectively. About a month after his admission he was attacked with troublesome diarrhœa, which persisted in spite of various remedies up to the date of his leaving the infirmary, and evidently caused considerable exhaustion. Unfortunately, in spite of all that I could urge to the contrary, as his end was manifestly approaching, he persisted in going home on Sept. 9th last, and died nine days afterwards, without having been seen by any medical man in the interim. His illness, then, may be calculated as extending over a year and seven months, or nine months after the enlargement of the bones was noticed.

Remarks.—I need scarcely say how extremely I regret the incompleteness of this case so far as a post-mortem is concerned, especially as I am not forgetful that it may be asked, granting the existence of the osteitis, what proof is there of the presence of sarcoma in the absence of any post-mortem evidence to that effect? We may feel, however, I think, almost unquestionably certain of the existence of the cancerous element in the case from the following facts. 1. The symmetrical œdema of both upper and lower extremities showing, in the absence of any cardiac or renal complication to account for it, that there was pressure upon the large thoracic and abdominal venous trunks, a pressure almost certainly exerted by new growths in some part of their course. 2. The existence of the nodules referred to in the skin; much importance was attached to these as a diagnostic aid by the late Dr. Hilton Fagge, who says that in the first case in which he saw them he mistook them for an accidental complication of molluscum fibrosum. 3. The negative evidence afforded by the absence of any other

disease and the rapid progress of the case—this form of osteitis having *per se* little if any tendency, I believe, to destroy life. In enumerating the symptoms presented by this patient I have referred to the existence of cutaneous hyperæsthesia on the trunk. At an early period of his stay in hospital, and before I was otherwise certain of the diagnosis, this was suggestive to me of the existence of internal cancer. Dr. Walshe refers to this symptom, and I once observed it in a marked degree over the skin of the thorax in a case of primary cancer of the lung that I met with some years ago. This man presented none of that curving of the bones depicted in Sir James Paget's cases of osteitis deformans; but had an absence of malignant complication permitted his life to be sufficiently prolonged, this condition would no doubt have developed. His youth was a remarkable feature in the case; all those seen by Sir James Paget have been, I believe, over forty. In conclusion, I would point out that with reference to an example of osteitis deformans brought before the Pathological Society in December, 1882, in which the arms were unaffected, Mr. Treves is reported to have said that "the case was a further illustration of two facts—(1) that the bones of the arms were usually free; and (2) that all cases where the bones of the upper extremity, except the clavicles, were involved occurred in women." To the last of these facts, at all events, my patient afforded a remarkable exception.—*Lancet, Jan.* 28, 1888, *p.* 171.

33.—ON SARCOMA OF THE LONG BONES.

By Fred. S. Dennis, M.D., Prof. Sur. Bellevue Hospital, New York.

In discussing sarcoma limited to the long bones a very simple classification can be made upon a pathological basis, viz.:—1. Subperiosteal sarcoma. 2. Central sarcoma.

The *clinical history* of sarcoma is an interesting feature of the disease. It is the malignant disease of early childhood, and has been seen in an infant under one year. As a rule, it is a tumour which develops suddenly and which runs oftentimes a rapidly fatal course. In two cases only have I seen the tumour grow slowly. Sarcoma of bone is usually a nodular, painful, rapidly growing neoplasm which in the later stages begins to ulcerate. If it grows from the subperiosteal tissue it is found to affect the shaft of the bone; is not distinctly circumscribed, grows very rapidly, and is not associated with inflammatory processes. If the sarcoma grows from the centre of the bone it usually affects the extremities of the bones instead of the shaft; it is a distinctly circumscribed neoplasm instead of a diffuse swelling, and grows slowly, which is in marked contrast to the subperiosteal variety. The slow growth is due to the fact that absorption of bone must take place by pressure of the tumour. This pressure causes atrophy of bone,

and this process is necessarily slow. The central sarcoma has an egg-shell crepitation in the later stages of the disease. This crepitation is due to the breaking of the attenuated and fragile shell of bone which has been pushed out by the growth from within, and is a pathognomonic symptom of central sarcoma.

The malignancy of sarcoma is manifested by its widespread metastases, by its complete annihilation of adjoining tissue, by pressure effects, and by hemorrhages due to ulceration, by its infiltration through bloodvessels in the majority of cases, and, finally, by its rapid strides toward a fatal termination unless interrupted by a radical operation.

The *diagnosis* of sarcoma in its early stages is often very difficult. The microscope only can decide in some cases. Time, which might afford definite information, cannot be utilised for the purpose of diagnosis. Procrastination in coming to a decision is too dangerous an agency to employ to settle such a momentous question. The use of the harpoon will throw intelligent light upon this doubtful and grave question, and settle beyond all peradventure the malignancy of the growth.

Great care should also be exercised in not making undue haste in coming to a conclusion as to the question of a growth being sarcomatous. I have had three cases sent to me for the purpose of amputation on account of sarcoma. Each of these three cases proved to be a chronic inflammation of bone, and each was completely cured without amputation.

One of these cases was of the thigh, the other two cases were of the tibia, and all three cases had consulted surgeons, who pronounced the neoplasms malignant and advised amputation.

The points of differential diagnosis between sarcoma of bone on the one hand, and chronic inflammation of bone on the other hand, are as follows:—

Sarcoma of Bone.	*Chronic Inflammation of Bone.*
1. Attacks extremities unless subperiosteal.	1. Attacks the shaft.
2. Forms soft swelling in comparison with sclerosis of bone.	2. Forms hard smooth bone.
3. Rapid in its course.	3. Slow in its course.
4. Distended veins over the surface of tumour.	4. No distended veins over surface as in sarcoma.
5. Does not invade joint.	5. Usually invades the neighbouring joint.
6. Circumscribed areas of fluctuation over swelling where cysts filled with bloody serum are found.	6. There may be diffuse area of fluctuation; but pus is found instead of bloody serum.

Another very important differential diagnosis must be made between sarcoma and carcinoma.

Sarcoma.	*Carcinoma.*
1. Origin of growth is from the mesoblast.	1. Origin of growth is from mesoblast and also from hypo- or epiblast.
2. Disseminates by bloodvessels.	2. Disseminates by the lymphatic channels.
3. Tumour may be enclosed in a capsule.	3. Tumour is never enclosed in a capsule.
4. Cachexia appears late in the history of the tumour.	4. Cachexia appears early in the history of the growth.
5. Disease of early life or middle life	5. Disease late in life as a rule.
6. Not so painful a tumour as carcinoma, and may develop with little or no pain.	6. Sharp, lancinating pain as a rule.

The *prognosis* in sarcoma is as gloomy as can be imagined. It is a disease which destroys life rapidly, unless arrested by amputation. The prognosis may be modified as regards time by the situation and the particular cell variety of the sarcoma. In whatever way we look at the prognosis it is serious. On the other hand a radical amputation may rescue a patient's life even in the cases of the most malignant variety. I shall furnish examples of this fact in the list of the cases that I have operated upon within the past few years.

The *treatment* of sarcoma of the long bones is simple, because there is but one operation, and that is amputation. From an experience derived from a number of these cases of sarcoma of bone, and from opinions formed after careful study of the cases of others, I am more and more impressed with the fact that amputation is the only operation which should be contemplated. I refer to sarcomata of the long bones. The operation of exsection or enucleation, and an application of caustics are, in my humble judgment, productive of harm; because the disease is not as a rule radically removed by these methods, and oftentimes the tumour returns very rapidly, and the operation seems only to add fuel to the fire.

I believe that in all cases of sarcoma of the long bones amputation should be decided upon at the earliest period possible, and the operation performed without delay. At the point of election I would suggest an amputation which would remove the entire bone affected, whether it is a subperiosteal or central sarcoma. This necessitates an amputation of the lower part of the thigh in case the tibia or fibula is the seat of the neoplasm. It necessitates an amputation of the hip-joint when the tumour is subperiosteal, and involves the shaft of the femur. In view of the great mortality of hip-joint amputation, a possible exception might be made in case of a central sarcoma of the condyle of the femur which was recognised early, and which was small in size. By amputation in the lower third of the femur in sarcoma of one of the long bones of the

legs, the popliteal glands are thus removed, and while this point would concern us more if the disease were cancer, yet I have seen a case of sarcoma affecting those glands.

The remedy of amputation which is suggested, is a severe one; but the disease for which the amputation is performed is a uniformly fatal one if left to nature, and in view of the great malignancy of sarcoma, I believe the operation should be the most radical one consistent with a due regard for the life of the patient during the immediate performance of the operation. It must be remembered that the patient is suffering from a uniformly fatal disease, and the chances of escape from it are in proportion, within proper limits of course, to the distance at which the limb is removed from the seat of the malignant tumour.—*Medical News, Jan.* 14, 1888, *p.* 30.

34.—ON THE TREATMENT OF FLAT-FOOT.

By Noble Smith, F.R.C.S.E., Surgeon to the All Saints' Children's Hospital, London.

The treatment of flat-foot has always been recognised as a difficult and often as an unsatisfactory undertaking. The giving way of the arch which supports the superincumbent weight of the body in standing is not easily remedied, because that weight so persistently acts as an opponent to our remedial efforts. So much is this the case, that prolonged rest has sometimes been advised as a necessary adjunct to other treatment. The many disadvantages of prolonged rest, even when it is possible, are sufficiently obvious without requiring a detailed description here, except to observe that the absence of exercise will not conduce to the permanence of any improvement which the rest may bring about. The support of the arch by means of pads and springs may be absolutely necessary to enable a patient to walk about at all, but they do very little as a rule towards curing the affection. The fact that osteotomy has been resorted to for relieving severe flat-foot proves that at least some surgeons have considered the abnormal condition incurable by the ordinary methods of treatment, or that the ordinary methods are so tedious and unsatisfactory that a severe operation is justifiable.

I have lately adopted a plan of treatment of flat-foot which promises to be very successful. It consists in arching the feet as much as possible by manual pressure during the setting of a plaster-of-Paris bandage. (I believe Mr. Willett has also practised the same or a similar method.) Some improvement in position may usually be effected by pressure with the hands, but it may be desirable in severe flat-foot to use greater force under the influence of an anæsthetic. The sole of the foot can then be bent over a small sand-bag or other firm pad. In moulding the foot in the

bandage it is also desirable to invert the sole slightly. A few days or longer of absolute rest before application of the bandage is an advantage, and will permit a better reduction to be made. After the application the patient will do well to rest again for a few days, or until the feet can be used for walking about without discomfort. Then a pair of sufficiently large shoes can be worn over the bandage.

As to the time during which the bandage is to be kept on, this must vary with circumstances. If there is much deformity a renewal of the bandage and a replacement of the foot in an improved position may be made every fourteen days, or at longer intervals, until a satisfactory position is attained; or the bandage may be kept on in the first place for several weeks. Of course if there is firm contraction of the peronei muscles, their tendons must be divided, and the operation recovered from, before the bandages are applied. When the bandages are discontinued, a light and simple mechanical support will be necessary for a time. Moreover, patient should avoid standing, and prolonged walking.

For exercise the use of a tricycle is an excellent plan, if in other respects suitable, and provided always that it be done with moderation. As to special exercises, the tip-toe movements, so ably advocated by Mr. Ellis, and also walking on the outer side of the feet and with the toes straight forward, are of very great value. I have cured many cases by these exercises alone.

As to pads or sole-plates these may be useful occasionally, but the more I see of these cases the less I use such supports. In any case, however, it is advisable to have boots made with sufficient room and width, with broad heels projecting forwards on the inner side to support the arch well. Friction, passive exercises including massage, and stimulation, all have a place in our methods of treatment to be applied as may be required; but the forcible reduction of the deformity, and retention of the feet in plaster bandages while exercises are kept up, form a plan which promises, as it has already effected, a very great help in the treatment of these obstinate cases.—*Practitioner, Jan.* 1888, *p.* 31.

35.—REPORT OF A CASE OF WLADIMIROFF-MIKULICZ OSTEOPLASTIC OPERATION OF THE FOOT.

By W. Barton Hopkins, M.D., Surgeon to the Episcopal Hospital, Philadelphia.

The operation which is the subject of this report was originally designed by a Russian, Dr. W. D. Wladimiroff in 1871, but as he published the account of it in his own language, it was not known out of Russia until nine years afterwards. In 1880 Dr. John Mikulicz, of Vienna, performed the same operation and published it as his own device, not knowing that it had ever been done before.

Wladimiroff called it the operation for the production of artificial pes equinus; Mikulicz, the osteoplastic resection of the foot. The toe-stump operation would probably still better distinguish it. It consists essentially in removing the entire heel and ankle-joint and applying what remains of the foot to the leg in a position of pes equinus, so that the patient walks on his toes. The conditions for which it has been performed are (1) caries of the larger tarsal bones, and (2) extensive loss of the tissues about the heel, either from disease or injury. For the relief of the former it has been almost exclusively practised, and a number of excellent results have been obtained, though there is, of course, the risk of the disease attacking the remaining bones and causing relapse. To the latter class of cases, though of these there are as yet but few examples, it will probably prove more particularly applicable, as in them the tissues involved preclude the conservative operations of Chopart, Pirogoff, and Syme, and leave no alternative but amputation of the leg. Should further experience confirm the observations so far made, that this operation is followed by decidedly better functional results than amputation, its future scope will probably include many cases of railroad, gunshot, and the like injuries, where the parts destroyed correspond with those which by it are removed.

There have been twenty-one cases recorded within the past seven years. Most of these have been successful and most of them for caries. The case reported this evening is only the second in which the operation has been done for injury of the tissues about the

Fig. 1.—Traumatic ulcer of the heel.

heel. The patient's history is as follows: Wm. D., aged thirty-seven, born in Scotland, a strong, healthy man, was admitted to

the Episcopal Hospital November 16, 1886. Two months before his admission he had been run over by a freight car. The wheel had passed over his left foot, tearing away the tissues of the heel down to the bone, laying bare the extensor tendons of the toes and leaving an isthmus of sound integument upon the dorsum of the foot not wider, according to the patient's recollection, than an inch and a half. During his stay in the hospital of nearly four months, the ulcer, for which he was admitted, obstinately refused to heal. Its cicatricial border having advanced to the utmost limit of its tensile strength, would repeatedly break down, so that all efforts to facilitate healing failed. The accompanying cut, taken from a photograph of the foot at the time of the operation, shows accurately the position of the ulcer and cicatrix on the outer side. On the inner side the ulcer did not extend quite so far forward. The operation was performed with proper antiseptic precautions, on March 8, 1887.

The patient, after etherization, was placed upon his abdomen the sound leg was flexed upon the thigh and held out of the way by an assistant. The injured foot having been cleansed, was elevated upon a block placed beneath the rubber cloth and a constant stream of sublimate solution from the irrigator directed upon it during the two hours and three-quarters occupied by the operation.

The first step consisted in dissecting out the posterior tibial nerve. An incision started behind the inner malleolus was carried obliquely downward and forward below it to a point below Chopart's joint. The nerve was found to be so deeply imbedded in newly formed, very dense fibrous tissue, that it was dissected out with some difficulty. It was then divided at the upper and lower angles of the wound, about two inches of its length being removed.

The second step in the operation consisted in forming the flaps. These had to be slightly modified by the form of the ulcer, in order that their edges should consist of moderately healthy skin; in most respects, however, the limits of the ulcer corresponded with rather remarkable accuracy to the prescribed lines of incision. The first incision was carried across the sole of the foot, down to the bone, from the tubercle of the scaphoid on the inside to a point a finger's breadth behind the base of the fifth metatarsal bone on the outside; and the second straight across the back of the ankle half an inch above the os calcis, from the external angle of the sole incision to the upper angle of the tibial nerve incision.

The third step consisted in the resection of the astragalus and os calcis, and the shaving off of the lower ends of the tibia and fibula and posterior surfaces of the scaphoid and cuboid. Disarticulation of the astragalus at the ankle-joint was done from behind forward; of the os calcis at its cuboid joint, and the astragalus at its scaphoid joint from below upward. Due care was taken not to injure the

dorsalis pedis during the last-mentioned disarticulation, as the position of the ulcer necessitated the division and ligation of the posterior tibial artery in forming the flaps.

The last step in the operation included the approximation of the bones, divided nerve and tendon ends, and the closure and dressing of the wound.

With the view of obtaining more perfect fixation of the tarsus to the tibia and fibula than has heretofore been found possible, two sterilized bone dowels were placed in holes drilled into the lower extremity of the tibia at points which corresponded as nearly as possible to the centres of the presenting surfaces of the scaphoid and cuboid; the insertion of their projecting points into these bones being deferred until the final adjustment of the parts. A very fine catgut suture was so placed in the divided and retrenched ends of the posterior tibial nerve as to bring these ends into very accurate apposition without undue pressure. The slack, however, was not yet taken up. In like manner sutures of stronger gut were introduced into the divided and retrenched ends of the tendon of the peroneus longus, about three inches of which were excised, and into the divided end of the tendo-Achillis, and the edge of the plantar fascia exposed in the lower flap. These sutures were all allowed to remain slack until the foot should be brought into its new position. Moderate pressure was sufficient to accomplish this and to impale the tarsal bones upon the sharp-pointed dowels. With the foot firmly retained in this position, the extremities of the nerve were brought accurately together and sutured. The tendon of the peroneus longus was likewise sutured and the terminal extremity of the tendo-Achillis stitched to the edge of the plantar fascia. The introduction of drainage catgut and suturing the skin flaps with catgut completed the approximation of the parts. A dressing of gauze, iodoform, and sublimate cotton was applied and the limb was placed upon a straight posterior splint. The latter was in three days substituted by a plaster-of-Paris double dressing, the foot and leg sections being connected by an iron bracket anteriorly in order to leave ample room for washing and dressing the wound. Five weeks later a small ulcer remained, but union of the deeper parts was complete and consolidation of the tarsal and leg bones was found to have begun. The patient at this time complained of tingling in the toes accompanied by occasional shooting pains, and there was partial anæsthesia of the sole of the foot. Sensation gradually returned, and is now restored except over a very limited area.

Three months after the operation, under ether, the toes were extended to a right angle; to accomplish which moderate force only was required. Since then there has been nothing to note. The limb continues to gain in strength and the patient can now, with a cane, walk four miles a day. He has had the braced shoe

which he wears but two weeks, and has, therefore, not yet had time to become thoroughly accustomed to it. He walks well without a cane, while with one, when not fatigued, he shows hardly a limp. This cut represents the limb after the operation, and was engraved from a photograph on the block.

Fig. 4.—Artificial pes equinus.

Two modifications of the operation, as practised in this case, deserve mention, namely: the employment of bone pegs or dowels to fix the tarsal bones to the tibia, and the suturing of the divided and retrenched tendons. The dowels provided proved rather too light to make the joint firm and immovable, but they were nevertheless used, as heavier ones were not at hand. Perfect fixation of the tarsus and leg at the outset, by lessening suppuration, by promoting early bony union, and by obviating the necessity of such carefully applied outside support, would seem to be an important factor in the after-treatment of the operation. The dowels should be three-sixteenths of an inch in diameter and three inches in length. They may be sunk two inches in the tibia and one inch in the tarsus Holes need not be drilled for them in the latter, as their sharp points readily penetrate the cancellated structure of these bones. Uniting the severed tendons has, without doubt, added to the function of the foot in this case. Though suggested in the Medical News editorially, it does not appear to have been attempted before. The plantar fascia was chosen as a strong acces-

sible point to which to attach the tendo-Achillis instead of the tarsal periosteum, as suggested in the News.

Within the narrow limits of motion which now remain, the patient can flex, as well as extend the foot. The motion is partly tarso-metatarsal, and partly tarso-tibial. The latter is diminishing, and the braced boot which he wears may probably be cast aside within one year.—*Medical News, Dec.* 3, 1887, *p.* 649.

36.—ON FORCIBLE STRAIGHTENING OF RICKETY BONES OF THE LOWER EXTREMITY.

By Edmund Owen, F.R.C.S., Surgeon to St. Mary's and the Children's Hospitals, London.

That slight rickety deformities of the lower extremity can be gradually but very slowly effaced without operation is a well-known fact, but if the deformity be at all severe then gentle measures generally fail. It is no unusual experience that when a surgeon has been endeavouring to straighten a valgous limb by gently straining it in a well-padded box-splint, he has had to abandon that treatment on account of the appearance of excoriation about the outer ankle or on the inner side of the knee. So also with the use of elastic bands. The child's skin is intolerant of continuous pressure, even when that pressure is slight.

About ten years since, when the operation of subcutaneous osteotomy was being widely advocated in the treatment of rickety deformities of the extremities, there appeared to be a considerable risk that, in the enthusiastic reception which it met with, sight might be lost of grand conservative principles; and this was felt in other countries than England. De Santi, for instance, called out against "blindly lavishing" the operation, whilst another French surgeon, at a somewhat later period, spoke boldly of what he called the *cacoëthes secandi*. Children of very tender years and therefore pliant limbs were being brought under chisel and mallet, whose slight deformities might surely have yielded to time and patience, and with no subjection to risk. But osteotomy has probably now taken its proper and important place amongst surgical procedures, and those who at first were inclined to regard it askance are ready enough to adopt it in the case of a severely knock-kneed or bow-legged boy or girl, rather than be wearied by the long-continued, irksome, and disappointing treatment of a gentler nature.

But between the gentle method and osteotomy there is a line of procedure which is perhaps too often overlooked, namely, the forcible straightening of the limb under an anæsthetic. The method was first introduced from France, where it had been widely practised by Delore, under the name of *redressement forcé*. I have now employed this plan in a considerable number of cases, not

with an "osteoclast," indeed, but by using the hands alone, or with the additional help of the knee, in the same way in which one would straighten a stiff bent stick, or a metal rod. Frequently I have tried the forcible method before proceeding to perform osteotomy, sometimes with success, but at other times to discover that there was no alternative to a cutting operation.

It is not to detract from the value of Delore's operation to say that it is unscientific, in that the operator does not know exactly in what manner he effects the improvement. Suffice it that he does effect the improvement and that without risk, at least so far as one can learn, either to limb, joint, or life. Perhaps it is that the straightening takes place by the yielding of the soft tissue of the end of the bones or of their articular surfaces, perhaps by a slight alteration in the plane of the junction-cartilage, or in the fibres of the outer lateral ligament, possibly of all three combined. It is surely a matter of considerable import, as it is also for sincere congratulation, that though the operation has been successfully resorted to probably hundreds of times, still no opportunity has occurred for obtaining a knowledge, by post-mortem inspection of the parts, of the exact nature of the change by which the improvement is effected.

The younger the child, of course, the more easy is the procedure. But then one must not lose sight of the fact that the very young child may be effectually treated, and properly so, by the gentle means only. Still, in the case of little children, slight and repeated attempts at forcible straightening, even with the employment of such slight violence as not to need the administration of an anæsthetic, may give material help in carrying out the patient and gentle method by splint and bandage.

In those cases of knock-knee in which the bloodless measures either offer no prospect of success or have absolutely failed, osteotomy is the only alternative; and in performing this I have now entirely discarded the osteotome and mallet, preferring to make an incomplete section of the femur with a key-hole saw and then completing the fracture by force. Having "cleansed" the area of operation, I make a longitudinal three-quarter-inch incision on the outer side of the thigh a little above the condyle, clearing a passage for the narrow-bladed saw by a large raspatory, with which also an endeavour is made to raise the periosteum. Along this instrument the saw is slipped, the femur being then sawn, so far as one can tell, about half or three-quarters of the way through. Sometimes, when the bone is very hard, the first attempt which is then made of breaking the bone fails, and the saw has again to be introduced. If both limbs require operation, the second is treated before the first is permanently dressed; they are then fixed straight in a box-splint or in a Bavarian dressing. Of the objection to the presence of sawdust in the wound we know nothing in practice,

though in theory it is often raised. The saw has a rather short and thin blade and a simple flat handle. The long stalk-bladed saw, which has been specially designed for subcutaneous osteotomy, is by no means suited for section of the lower end of the femur, or of the shaft of the tibia, in the case of a child.

For a leg which is bowed laterally, or possesses that antero-posterior and extreme curve whish is so often found a little above the ankle of a rickety child, and which refuses to yield to forcible manipulation, osteotomy with the saw is likewise easily performed. A direct incision is made down to the inner surface of the tibia and the bone is sawn about half-way through and then broken. It may even then be prevented from coming perfectly straight by the tendon of Achilles, which may have been stretched like a bow-string in the concavity of a curve; instruments should therefore always be at hand for performing tenotomy. And when the bent fibula is a check to the straighening of the bowed but severed tibia, it is easily snapped through at about its middle by giving it a sudden sharp bend.

However great an antero-posterior or a lateral curvature of the leg-bones may be in childhood, it is, as a general rule, superfluous to remove a wedge-shaped piece of bone from the convexity of the bend. A simple direct incision into the bone, and fracture of the undivided tissue suffice, for after the creation of this complete compound fracture it is advisable, if not absolutely necessary, to keep the child off his feet for several months, lest the soft uniting cement also yield and the deformity become as bad as or worse than ever. During these months of perfect rest the slight deformity which remained when the limb was put up after the operation gradually fades away. The fibula breaks through so easily with a properly applied and sudden jerk that osteotomy of its shaft can rarely be needed. But in breaking this or any other long bone, as in attempts to straighten a bowed leg or a knock-knee, the surgeon too must be careful not to put too great a strain upon the junction-cartilages.

The object of this short paper is to direct further attention to the value of *redressement forcé* as a means of treating such deformities of the lower extremities as are not likely to be found amenable to the gentler method, and to urge that when osteotomy has to be performed upon a tibia or femur which is too solid to yield to the bloodless treatment, a simple key-hole saw is to be preferred to the osteotome and mallet. Doubtless in the master-hand of an Ogston or a Macewen the osteotome is safe enough, but one has heard of various grave accidents in connection with its employment in the hands of others—accidents which could hardly happen with a saw which is being worked from the front of the bone, and the movements of which even a prentice hand is able to appreciate and to guide.—*Practitioner, April*, 1888, *p.* 261.

BRAIN AND NERVOUS SYSTEM.

37.—ON CRANIO-CEREBRAL TOPOGRAPHY.

By Arthur W. Hare, M.B., F.R.C.S.E.; Senior Demonstrator of Surgery, Edinburgh University.

The study of the relation of the surface of the brain to the skull and scalp is a much wider subject for the anatomist than for the surgeon; for while the one must furnish with the utmost precision an account of relations as he sees them in the course of his dissection, the other deals with the living subject, and must have means at his disposal for defining the relation of internal structures to external land marks apart from initial exploratory procedures. Whatever method the surgeon adopts, it must obviously be quite independent of a preliminary reflection of the scalp, since the due protection of that covering from unnecessary interference and its proper treatment in operative procedures are essential to success. Any system depending upon the markings on the skull alone is therefore inapplicable: it may render confirmatory evidence to the surgeon in the course of an operation, but the primary data on which he must rely are the facts he can determine in regard to the head with all its coverings intact. The cranial sutures cannot therefore be used as landmarks, as they may be completely obliterated, and are very frequently not distinctly perceptible in the living subject. Some of the cranial eminences, however, are always available, and will give quite sufficient and accurate information on the point in question. In deciding which of them to adopt as of actual value, it is necessary to exclude all bony prominences which are not in direct relation with one part or other of the cranial cavity; they must further have some definite relation to the brain-case as a whole, irrespective of local variation in the development of the cranial bones of which they form a part. None of the prominences of the face are available, since they have no direct relation to the cranium as a whole. The unequal development of facial bones in relation to the skull proper, in different races and individuals, is clearly shown by Camper's observations on the "facial angle," and sufficiently marks their unsatisfactory nature as a basis of measurement. Though somewhat less obvious, it is equally true that bony landmarks on the lower segment of the skull cannot be taken as the basis of an accurate system of mapping out the regions of the cortex in their relation to the surface of the head. If the external auditory meatus or the mastoid process be taken for such a purpose, the lines traced from them upwards over the convexity of the skull will give inconstant results according as the frontal zone and the anterior fossa, or the occipital zone and the posterior fossa, are severally more or less developed at the expense of the parietal zone and the middle fossa of the skull. Though such a method

may give uniform results in a series of typical skulls of any given race, its results will be found to vary extremely where a comparison is instituted between those of different types, and especially if there should be irregularities in the development of the individual bones of which such landmarks form a part. Excluding these outstanding landmarks for the reasons stated, there remain four of primary value in establishing a system of measurements. These are the glabella, or root of the nose, which bears a definite relation to the anterior limit of the cranial cavity; and the occipital protuberance, or inion, which bears a similar relation to its posterior end, corresponding to the junction of the falx with the tentorium. The whole mass of the cerebrum is disposed between these two points, and they bear definite relations to its cortical matter, uninfluenced by the respectively larger or less development of the bones forming the vault. The third constant landmark is the external angular process of the frontal bone, which bears a relation to the lateral expansion of the frontal lobes similar to that borne by the two prominences already mentioned to the anterior and posterior extremities of the cerebrum. It has also a uniform relation to the fissure of Sylvius. Lastly, the parietal eminence is of value, since it marks the greatest lateral expansion of the substance of the hemisphere; and, as Sir W. Turner has shown, bears a special relation to the supra-marginal convolution. Its cranial relations vary much in different heads. In a brachycephalic skull it is further from the vertex than in one of the dolico-cephalic type; but its cerebral relations are much more constant than its cranial, and it is therefore of value for the purposes of localisation in relation to the cerebral cortex.

To find the upper end of the fissure of Rolando, by the use of these data, the surface measurement in the middle line of the head should be taken over the scalp from the glabella to the occipital protuberance. In ordinary adult heads this will vary from eleven to thirteen inches. Measured along this line from before backwards, the distance from the glabella to the top of the fissure will be 55·7 per cent. of the total distance from the glabella to the occipital protuberance. The following sliding scale shows the distance from the glabella to the top of the fissure in all ordinary heads:—

Where the distance from the glabella to the occipital protuberance is	The distance from the glabella to the upper end of the fissure of Rolando is
11 in.	$6\frac{1}{10}$ in.
$11\frac{1}{2}$ „	$6\frac{2}{5}$ „
12 „	$6\frac{3}{5}$ „
$12\frac{1}{2}$ „	7 „
13 „	$7\frac{1}{5}$ „

This scale is based on measurements taken from eleven heads of the most varied proportions. It depends for its accuracy on the fact that the pre-Rolandic and post-Rolandic regions of the brain

have a uniform proportion to one another as regards extent, whatever the size of the brain as a whole. The pre-Rolandic arc is thus a definite fraction of the arc of the whole cerebral surface, measured in the middle line, and corresponds to a little more than half (55·7 per cent.) of the whole arc. The extent of the whole arc can always be obtained by taking the measurement between its extremities, the glabella and inion, as bearing a definite relation to it; and having calculated the fraction of this line corresponding to the pre-Rolandic arc as above defined, that distance is measured off from the glabella in the middle line, and gives the position of the top of the fissure. Professor Thane, of University College, employs a modification of this method: he halves the distance from the glabella to the inion; and, having thus defined the middle point of the vertex, takes a point half an inch behind it as the top of the fissure. This is not, of course, so accurate as a sliding scale, but it is quite sufficiently so for practical purposes, and as such it must be recommended as the most convenient method in the majority of cases.

Having thus defined the position of the upper end of the fissure, it is desirable to know its length and direction. The scalp measurement corresponding to its length is $3\frac{3}{4}$ in. It runs from above downwards and forwards, its axis making an angle of 67° with the middle line. In order to give practical value to the foregoing facts, an instrument has been devised, at the suggestion of Professor Chiene, by Dr. Claude Wilson, of Tunbridge Wells, combining the scale of measurements for localising the fissure with those data re-

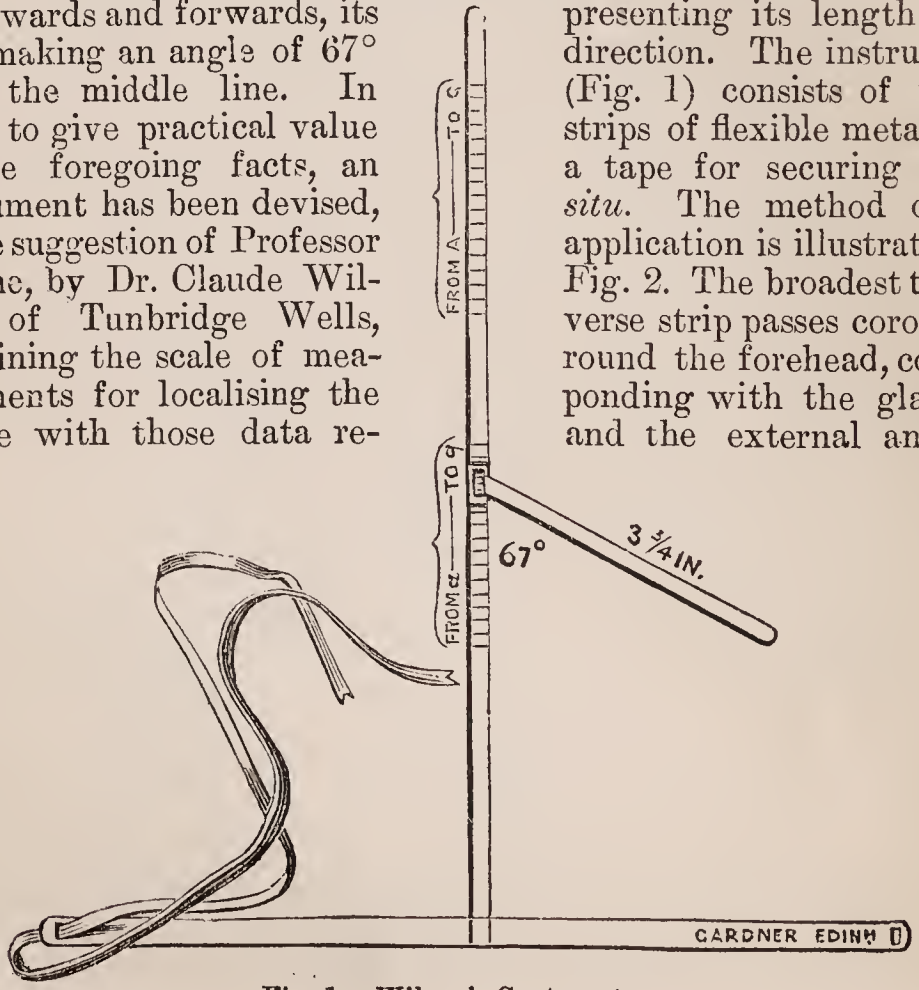


Fig. 1.—Wilson's Cyrtometer.

presenting its length and direction. The instrument (Fig. 1) consists of three strips of flexible metal and a tape for securing it *in situ*. The method of its application is illustrated in Fig. 2. The broadest transverse strip passes coronally round the forehead, corresponding with the glabella and the external angular

process; the narrower longitudinal strip passes backwards from the glabella in the middle line to the occiput. This strip is marked with two scales of letters: capitals in its posterior fourth, and small letters about the middle of the strip. These two scales bear an exact relation to one another, calculated to suit in the application of the instrument to any ordinary head. Measured from the glabella backwards, the distance to any given small letter is 55·7 per cent. of the distance from the glabella to the corresponding capital letter; thus, when any capital letter falls directly over the inion, the corresponding small letter will coincide with the top of the fissure. A third narrow reversible strip slides on the longitudinal strip of metal, marking an angle of 67°, opening forwards, and marked at $3\frac{3}{4}$ inches from its attached end, thus giving the length and direction of the fissure on the surface of the head.

The fissure of Sylvius has very definite relations both to external landmarks of the head and to markings on the surface of the skull, which will enable the surgeon to localise its position prior to operative interference, and to confirm his view of its locality during the early stages of the operation. A line is drawn from the external angular process of the frontal bone backwards to the occipital protuberance, taking the shortest route between these points. Such a line droops a little towards the external auditory meatus, avoiding the greater convexity of the skull, which lies in the course of a horizontal line between the bony prominences. It usually passes about half on inch above the meatus, and thus closely corresponds to the floor of the middle fossa at this point; in front of the meatus it is above the floor of the middle fossa, and behind it runs parallel to, and nearly coincident with, the attachment of the tentorium and the posterior half of the lateral sinus. A measurement of an inch and one-eighth along this line, backwards from the external angular process, marks the commencement of the

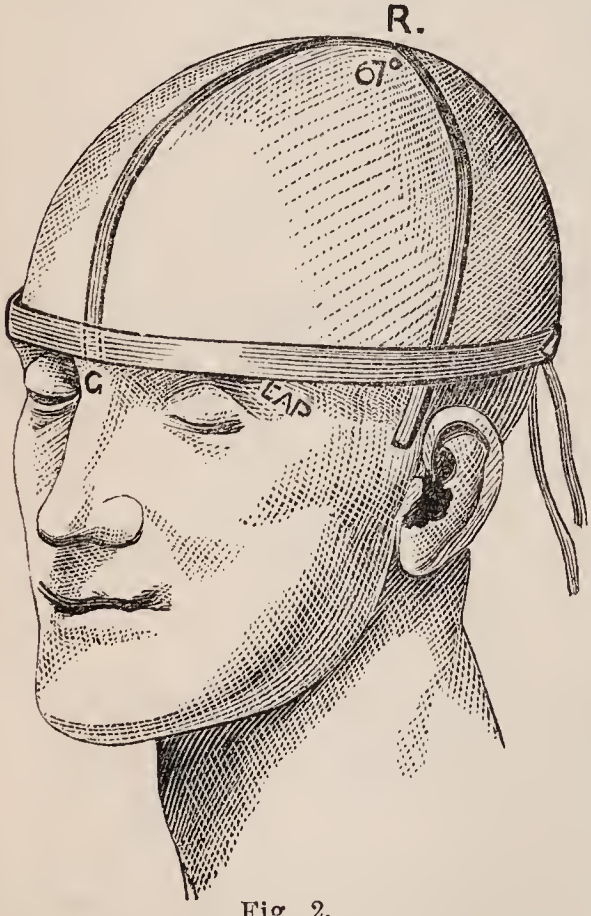


Fig. 2.
Wilson's Cyrtometer *in situ*. G, Glabella. EAP, External angular process. R, Fissure of Rolando; its position and direction marked by the lateral strip of metal.

fissure of Sylvius. In this case there is no need for a sliding scale, for in heads of the most varied shapes and sizes the measurement remains identical. From this point a straight line drawn to the centre of the parietal eminence marks accurately the course of the posterior limb of the fissure. On reflecting the skin and the temporal fascia and muscle, the surgeon will find the pterion or junction of the sphenoid with the frontal, parietal, and temporal bones. From its point of origin under cover of the great wing of the sphenoid, the main line of the Sylvian fissure follows the line of the squamo-parietal suture to its highest point, whence it continues its course to the parietal eminence.

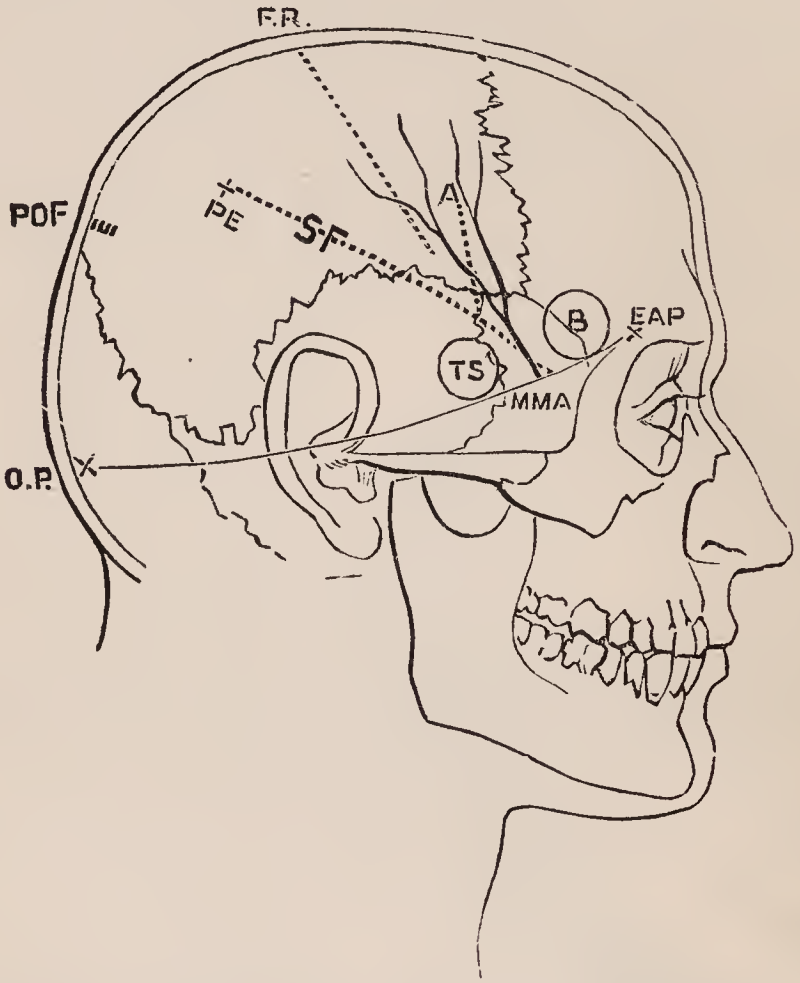


Fig. 3.—Head, skull, and cerebral fissures (adapted from Marshall). G P, Occipital protuberance. E A P, External angular process. S F, Sylvian fissure. A, Its ascending limb. F R, Fissure of Rolando. P E, Parietal eminence. M M A, Middle meningeal artery. T S, Tip of temporo-sphenoidal lobe. B, Broca's convolution.

This is shown in the dotted line S. F. in Fig. 3. The ascending limb of the fissure corresponds closely with the sphenoido-squamosal suture in its entire length, and it is continued upwards in the same line for half an inch. An important anatomical detail in this region, that the surgeon does well to remember, is that the middle

meningeal artery, after grooving the inner surface of the great wing of the sphenoid, passes on to the anterior inferior angle of the parietal bone, and is distributed to the dura mater lining the anterior and superior half of that bone. If he desire to expose the tip of the temporo-sphenoidal lobe, he should trephine behind the upper extremity of the great wing of the sphenoid; if to expose Broca's convolution, immediately in front of the same bony peninsula. The sites of the two operations are shown in Fig. 3.—*Lancet*, *March* 3, 1888, *p.* 407.

38.—A CASE OF CEREBRAL ABSCESS IN CONNECTION WITH OTITIS MEDIA, SUCCESSFULLY EVACUATED.

By David Ferrier, M.D., F.R.S., Physician to the National Hospital for the Paralysed and Epileptic, London.

T. H., aged 47, a skilled artisan, was first seen by Mr. Coffin on November 25th. He had been ill since November 10th. On the 15th a discharge, somewhat offensive, had come from the left ear, which continued for about eight or ten days. When first seen he was in a drowsy condition, but was capable of being roused, and replying to questions put to him. He complained of pain over the left side of the head, forehead, and back of the eyes, with a considerable degree of photophobia. The pain on the left side of the head was interrupted by pressure and percussion. There was slight discharge from the left ear, but the ear could not be thoroughly examined on account of the tenderness. The pupils acted normally, and vision appeared unaffected. There was no motor or sensory paralysis. The pulse was 52, weak and intermittent; respirations 14, laboured and sighing. Temperature normal.

Mr. Coffin ordered the ear to be syringed with weak Condy's fluid, and prescribed a stimulant.

Next day the patient was brighter. He had less pain in the head. He was able to sit up in bed and smoke a cigarette, but he continued very drowsy and slept much.

On the 27th, 28th, and 29th he was still improving. The temperature was normal, the pulse regular, and the tongue cleaner under the influence of a saline mixture and small doses of mercury. The discharge from the ear was more copious than it had been. There was very little tenderness on percussion of the left side of the head. The patient was generally asleep, but would rouse up for an hour or so, and occasionally smoke a cigarette.

On the 30th he was more drowsy, and apparently unwilling to be disturbed. At times it was very difficult to rouse him at all. He complained of more pain at the back of the eyes and general headache. His pulse was 60, respirations 16, and temperature absolutely normal.

On December 1st and 2nd the condition was essentially the

same. There was no increase in the headache, but the drowsiness was greater.

Early on the 3rd he had become temporarily delirious, and had fallen back exhausted, but during the rest of this day and next there was no noteworthy change in the symptoms.

On the 5th, Mr. Coffin thought there was slight weakness in the right angle of the mouth, but so slight that it was considered somewhat doubtful by those who were acquainted with the usual expression of face.

On the 6th, for the first time there were indications of affection of speech. He used wrong words, and seemed angry at not being understood when he asked for what he wanted.

It was on the evening of the 8th that I saw the patient. He was at that time less drowsy and much clearer in his intellect than he had been for some time previously. He was able to sit up in bed, and talk, but his words were incoherent and for the most part unintelligible. He appeared to understand simple questions, but at other times appeared confused and unable to understand. He called things by wrong names. When asked to read a few sentences from a journal placed before him, the words he uttered had little or no resemblance to those before him.

There was no appreciable defect in the mobility or sensibility of his limbs, but the right angle of the mouth acted less energetically than the left. Examination of the eyes, carried out with some difficulty, revealed signs of optic neuritis, but a more thorough investigation of this and other conditions was reserved till the following day. From the facts, however, related to me by Mr. Coffin, and the patient's condition as seen by myself, I confirmed the opinion passed by Mr. Coffin that it was a case of abscess] of the brain, in connection with disease of the middle ear, and I considered that the position of the abscess was fairly indicated by the symptoms.

The case seemed to me to be one which ought to be dealt with speedily, and I advised immediate removal to the hospital, with a view to further careful investigation and operative measures. The patient was removed the next morning to the National Hospital for the Paralysed and Epileptic, under my care. At this time he was conscious, and complained of no pain anywhere. He replied to questions, but frequently used wrong words without seeming to be aware of the fact. He occasionally hesitated to do what he was told, appearing as if he had some difficulty in understanding what was said to him. There was perceptible weakness of the right angle of the mouth, and though he could make every movement with his right hand, it was found that the grasp of the right hand was only 80 lbs., whereas that of the left was 100 lbs., the patient being a right-handed man. The tendon reactions were active on both sides, and there was no appreciable

difference between those of the left and right. There was no affection of sensation. Ocular movements were normal, and the pupils equal and contractile. Ophthalmological examination (verified by Mr. Brudenell Carter) showed the existence of well-marked optic neuritis, with a small hemorrhage over the right disc, and whitish band below that of the left. The senses of taste and smell were normal. The patient could hear a watch 15 inches from the right ear, but only on contact on the left side. The left auditory meatus was filled with a purulent secretion, which prevented a view being obtained of the condition of the membrana tympani, and it was considered not advisable to attempt to remove this at the time.

Though the patient complained of no pain in his head, I found on careful examination that there was a spot tender to pressure and percussion situated two inches above and just anterior to a line drawn upwards from the external auditory meatus.

From the results of my examination on this and the previous day, I had no doubt that the patient was suffering from a cerebral abscess. The comparatively rapid onset of symptoms indicative of cerebral mischief in a man previously in good health, coincidently with signs of inflammation and purulent discharge from the left ear, were in favour of abscess rather than tumour. There had been no vomiting, convulsions, or febrile disturbance or other indications of meningeal inflammation.

The fact that there had been no rise of temperature did not exclude the idea of encephalitis resulting in abscess, for many cases of cerebral abscess appear to run their course without causing febrile disturbance, the temperature being in some rather subnormal than the reverse. The position of the abscess, verified by the operation, was determined both from the symptomatology and the position of the pain experienced on percussion. The relative weakness of the right angle of the mouth, the ataxic speech, and slight degree of word-deafness, indicated that the disease was situated in close proximity to the speech and auditory centres of the left hemisphere, but not actually destroying them; and the conditions of such a lesion would be supplied by an abscess situated in the anterior third of the temporo-sphenoidal lobe and abutting or pressing on the fissure of Sylvius.

This localisation from symptomatology I considered confirmed by the discovery of a spot, tender on pressure and percussion, coinciding in position with that part of the superior, or superior and middle, temporal convolution which lies immediately posterior to the ascending limb to the fissure of Sylvius, and below the inferior extremity of the ascending frontal convolution. I would not consider the position of the tender spot as by itself a safe guide to the localisation of abscess or other cerebral disease, for the pain may be referred to a region at a considerable distance from

the disease. Thus Mr. Hulke (Brit. Med. Journal, July 3rd, 1886) records a case in which there was a tender spot above the ear, whereas the abscess was in the cerebellum: and in a second pain was felt acutely in the occiput, whilst the abscess was in the temporo-sphenoidal lobe.

But when, as I pointed out many years ago, there is pain on percussion not spontaneously complained of over a region indicated by the symptoms as probably the seat of disease, the localisation is rendered all the more certain. I was therefore confident that an abscess would be found in the position indicated, and was of opinion that no time should be lost in resorting to trephining with a view to its evacuation.

My colleague, Professor Victor Horsley, after consultation on the case, concurred in my views, and operated accordingly on the following day. I need only remark that when the dura mater was removed over the region indicated, the brain, which had a normal appearance on the surface, was seen to bulge forward into the opening in the skull, a sure indication of pressure underneath; and on puncturing with a trocar, a considerable quantity of inodorous pus—about five drachms—welled out through the cannula. The subsequent history is one of uninterrupted recovery. The optic neuritis gradually subsided. Already, on the fourth day after the operation, the optic discs were clearing, the margins were becoming defined, and the extravasation of the edge of the right disc had disappeared.

On December 23rd the left disc was apparently quite normal; the right was still a little veiled, but the effused blood was no longer visible.

On January 3rd no difference could be perceived in the action of the two sides of the face. At this time the wound had become quite cicatrised. The removal of the surgical dressings allowed of a more careful examination of the condition of the left ear than had been previously considered advisable. After examination of the ears on January 18th Mr. Cumberbatch reported that the discharge from the left ear had entirely ceased, and there was no abnormal condition of the external auditory meatus. Hearing, right $\frac{30}{100}$, left $\frac{20}{100}$.

Process conduction was normal, indicating mischief confined to the middle ear. No perforation could be detected in the membrana tympani, but it was thickened, cuticular in appearance, and purely granular. There was a slight opacity—probably cicatricial—behind the handle of the malleus, and rather above the centre of the membrane.

Before leaving the hospital the patient gave me the following personal details of his case. He first complained of pain in the left ear on Tuesday, November 8th. For this he inserted some cotton wadding in the ear. Next day this appeared tinged with blood.

For about five days a clear discharge occurred, soaking through the wadding, and staining the pillow on which he lay. At this time, also, he had some pain in his throat and chest, which, together with the condition of his ear, he attributed to chill. The discharge from the ear changed to a thick, gummy, slightly yellow flow. He then took to his bed, as he did not feel able to stand up.

From November 20th his memory became an entire blank. "The next thing I recollect," said he, "was you standing by my bedside."—*British Medical Journal, March* 10, 1888, *p.* 530.

39.—ON TETANUS AS AN INFECTIOUS DISEASE.

By Charles B. Ball, M.D., F.R.C.S.I., Surgeon to Sir Patrick Dun's Hospital, Dublin.

[After reference to the observations and experiments of Nicolaier, (1884), Rosenbach (1886), Reuter (1887), Carle and Rattone (1886), Shakespeare (1887), and others, which seem to prove incontestably that the tetanus of man can be communicated to lower animals, and that cultivations of bacteria found in tetanus are capable of producing the disease after several generations, Dr. Ball says:]

Let us see now how clinical observation supports the theory of the zymotic origin of this terrible disease. The clinical evidence may be grouped under two heads—first, the records of anything like epidemics of tetanus; and, secondly, any individual observations tending to show the transmissibility of this disease.

During the present year tetanus has appeared with considerable frequency in the Dublin hospitals, and I wish to express my indebtedness to the house surgeons of the various hospitals for the imformation which I now beg to present—from which it will be seen that there were 4 cases treated in the Dublin hospitals in 1886, and up to October 31st of the present year 16.

The mortality statistics of the Registrar-General for Ireland, however, do not show, during the past nine years, any marked increase of the number in any one year. Although we may assume that these statistics include most of the cases of so-called idiopathic tetanus and trismus neonatorum, they are open to a grave fallacy in respect to cases of traumatic origin. In the majority of the latter a coroner's inquest has taken place, and the deaths are then registered on the information of the coroner, who usually is satisfied with an inquiry as to how the injury occurred, and not how it proved fatal. For instance, one of my own cases, which died of tetanus, is registered simply as "from an injury received from a tramcar (accidental)," and nothing is stated about the tetanus.

The liability of the operation of ligature of hemorrhoids to be followed by tetanus has obtained wide currency, but an investi-

gation of the facts discloses very remarkable results. According to Allingham the number of cases operated on by ligature at St. Mark's Hospital, London, up to 1881 was 4,013, and of these but 5 died of tetanus, 4 of which occurred during the months of March and April, 1858, during which time Curling tells us tetanus was abnormally frequent in other London hospitals.

When we come to investigate individual cases of supposed direct infection, we meet with some very surprising instances. In a case noted by Ammon, a surgeon, after treating a man with traumatic tetanus, attended a woman with a retained placenta, which he removed. The woman was shortly afterwards seized with a virulent and rapidly fatal attack of tetanus. But it is in the case of lower animals that some of the most remarkable observations have been made. At the meeting of French surgeons, last year, the nature and treatment of tetanus was one of the special subjects for consideration. According to Cérémini, at Noisy-le-Sec tetanus has been endemic for a very long time, and it is computed that $1\frac{1}{4}$ per cent. of the horses there die of this disease. In a village of the Ardennes a veterinarian castrated 13 horses on the same litter, and they all died of tetanus. He subsequently went to a neighbouring village and castrated 10 others, all of which died also. Cases are recorded by Large and Verneuil in which men attending directly to tetanised horses took the disease and died. Verneuil compares tetanus to trichinosis, rabies, anthrax, and glanders, in being communicated to man from the lower animals; and he considers that the horse is the animal from which it most frequently originates. He grounds his opinion on the following facts:—The frequency of tetanus amongst horses; the cases above noted, in which persons directly in attendance on horses ill with tetanus have contracted this disease; and its common occurrence, in his experience, amongst grooms, stablemen, and others, whose wounds have been contaminated with clay soiled with horse dejections. In order, if possible, to obtain any evidence in support of this view, I addressed inquiries concerning the frequency of tetanus in horses and lower animals this year to several of our influential veterinary surgeons in this city. Mr. Lambert, whose experience is so large, replied to me as follows.—"Tetanus has been more prevalent this year (by two to one) than any year since I started practice." Mr. M'Kenny states that "iodiopathic" cases were more than usual this year, but that others were about an average. Mr. Ferguson, Mr. Sewell, Mr. Allen, and Mr. Freeman, however, inform me that they have not observed any special frequency this year.

My personal experience of tetanus has, I am glad to say, been small, and until the present summer I have not had a case for nine years. This year, however, I have lost two cases; and the way in which they occurred suggests the possibility of direct infection.

The first was that of a boy who was admitted into the children's ward of Sir Patrick Dun's Hospital, July 15, after having sustained a very severe accident from a tramcar—six ribs on the right side were broken; there was a severe lacerated wound of the axilla; the brachial plexus was torn through, and the brachial artery ruptured; gangrene of the arm ensued, and it was amputated through the shoulder-joint, July 19. Tetanus developed on the 22nd, and proved fatal on the 23rd.

The second patient was admitted to the same ward, and placed in the adjoining bed on September 5, for the purpose of having an operation for the radical cure of hernia performed. The operation was done on September 12th; the case ran an aseptic course, so far as suppuration was concerned; the wound was absolutely healed by the 14th day, and all dressings were dispensed with; on the 17th day, however, symptoms of tetanus supervened, and the disease proved fatal five days afterwards. Now, although there was an interval of six weeks between these two cases, it must be remembered that they occupied adjoining beds in the same ward, whereas there had not been a case of tetanus in the hospital for upwards of eight years before. No doubt all surgeons have noticed the strange coincidence by which cures of rare injuries and other surgical affections come under observation at the same time; so that it is only by careful observation, extending over a long series of cases, that sufficient data can be obtained. When it was first suggested that tubercular phthisis could be communicated by direct infection, few medical men believed it; but soon a considerable number of cases were put on record which appeared to support the suggestion; considering the much greater rarity of tetanus, it must be admitted that the number of cases in which apparently the disease was due to direct infection are relatively great.

It may be urged against the infection theory that the disease sometimes is idiopathic—*i.e.*, without apparent injury, and that the period of incubation is uncertain. With regard to the first objection, a wound may be so trivial that it escapes observation, or possibly an abrasion of the mucous surface may be the starting point. No one now questions the zymotic origin of erysipelas, yet many cases of the latter disease arise without recognisable traumatism. The parallel between the two diseases is further exemplified by the fact, that in both, when they are of the so-called idiopathic variety, the course is usually much milder.

The uncertain period of incubation cannot be considered a matter of very great importance. We know that, in rabies for instance, the period of incubation varies within wide limits, and yet its direct contagiousness cannot be questioned.

Mr. Shakespeare's experiments, as far as they go, appear to show that the more attenuated the virus is, the longer the period of incubation, and probably the milder the resulting tetanus will be.

Clinical experience quite bears out these observations. Although we may view with distrust the case recorded by Robison, in which a negro scratched his thumb with broken china, and died of tetanus in a quarter of an hour, still it is incontestable that some cases develop with extreme rapidity. Chalmers lays down the law that cases occurring in 24, 36, or 48 hours after injury rarely survive the third day, but comparatively few are lost when it comes on after the ninth or eleventh. We however sometimes see, even after a long incubation, a fatal issue, as in the case I have noted.

I think it is not too much to hope that, with a more accurate knowledge of this terrible disease, a more efficient prophylactic treatment will be the means of saving many lives.—*Dublin Journal of Med. Sciences, Dec.* 1887, *p.* 461.

ORGANS OF CIRCULATION.

40.—CASE OF CIRSOID ANEURYSM; EXCISION; RECOVERY.

By George A. Wright, B.A.Oxon., F.R.C.S., Assistant Surgeon to the Manchester Royal Infirmary.

Mrs. L——, aged twenty-nine, was admitted under my care into the Royal Infirmary on Nov. 2nd, 1887. She was a healthy woman, and gave the following history. When fifteen or sixteen years old, while combing her hair she scratched a little "pimple" on her head, and made it discharge a small quantity of watery fluid. Soon afterwards a swelling appeared, and gradually increased in size until she was twenty-four years of age, at which time she married. During her first pregnancy the swelling increased much, and at the birth of the child was as large as a thimble. There was then no pain, but pulsation, which had been felt slightly before, increased. Menstruation had no effect upon the swelling, but each pregnancy (she has four children) seems to have accelerated the rate of growth of the aneurysm, and it became painful. Both pain and swelling had increased rapidly of late. On admission there was a swelling in the left occipito-parietal region of the size of a goose egg. It was spongy to the touch and pulsated. The tumour could be partially emptied by pressure, and apparently contained one or two coagula; a soft bruit could be heard in it. Over the most prominent part of the aneurysm the skin was red, and enlarged vessels were to be seen in it. The occipital artery, much enlarged, could be felt running into the tumour, and on compressing this vessel all pulsation ceased, and the swelling diminished in size and became softer. The patient complained of occasional shoots of pain and of a constant burning sensation. The aneurysm was considerably larger than when it was first seen in the out-patient room a fortnight previously. Besides the occipital, another large vessel—the posterior auricular (?)—appeared to feed the

growth. On firm compression a well-defined hard rim could be felt surrounding the base of the mass. The measurements were as follows: Greatest transverse diameter, $4\frac{3}{4}$ in.; greatest longitudinal diameter, $5\frac{1}{2}$ in.; circumference, 11 in.; greatest elevation above the scalp level, $1\frac{1}{2}$ in. On Nov. 7th a curved incision was made below the posterior part of the tumour with the intention of tying the occipital artery, but no well-defined vessel could be found at this spot. An aneurysm needle was passed beneath the line of pulsation, but apparently really this transfixed an outlying part of the growth. As, however, pressure at this part arrested pulsation almost if not quite completely, a ligature was tied round the included mass of tissue, and after securing a few smaller vessels the wound was closed, and a large specially adapted truss was applied over the dressings to compress the aneurysm. The pressure of the truss was, however, so painful that it was removed by the house surgeon in the evening. On the 8th the truss was padded and reapplied. On the 9th the scalp was œdematous, probably as a result of the truss pressure, and pads of wood wool and a capeline

bandage was substituted for the truss. The general condition of the patient was very good. The treatment was quite ineffectual, and the aneurysm was increasing in size, so on the 17th two long

pins were passed at right angles to one another beneath the base of the mass, and an elastic ligature was wound round them; the whole mass was then readily excised. On removal of the elastic ligature there was free bleeding for a moment or two, but the vessels were quickly ligatured and some oozing that remained stopped by the actual cautery. The main vessel of supply (occipital) was fully as large as, or larger than, the femoral artery of an adult; as this pulsated very freely and was dilated beyond the line of excision, the wound was prolonged backwards, the skin reflected, and ligatures passed round the mass of tissue containing the vessel. The main part of the wound was left open, dusted with iodoform, and dressed. The subsequent course of the case was uneventful; the wound healed somewhat slowly, and its progress was delayed by the gradual coming away of the silk ligatures, which caused some suppuration. The woman was able to leave the hospital on Dec. 25th, and the wound was soundly healed by the latter part of January. She is now quite well, free from pain, and there is neither swelling nor abnormal pulsation.

The case is a typical one of the circumscribed variety of cirsoid aneurysm or cavernous angioma. Its vessels of supply were few, but very large and very thin-walled, the occipital artery being its main feeder. It was no doubt well suited to the treatment adopted of complete excision, which was more radical and dangerous than ligature of the external carotid. The variable rate of growth, its rapid increase of late, its association with pregnancy, and the effect of the first slight injury are noteworthy. The accompanying sketch by one of our house physicians (Mr. Bury) gives a good idea of the aneurysm; to him, and to Mr. Bannister (the house surgeon) and Mr. Hitchen (the dresser), I am indebted for help in recording the case.—*Lancet, April* 7, 1888, *p.* 669.

ORGANS OF RESPIRATION.

41.—A NEW METHOD OF APPLYING THE NASAL TRUSS FOR CORRECTING DEFORMITIES OF THE NOSE.

By W. J. Walsham, F.R.C.S., Assistant Surgeon to St. Bartholomew's Hospital, London.

In the Lancet for September 20th, 1884, I described and figured a nasal mask that I had employed for the purpose of gaining a fixed point wherefrom to bring pressure to bear upon the nose in cases of lateral deviation of that organ as the result of injury. The ordinary nose truss fastened by a head band, spectacle-frame apparatus, and similar contrivances, I had found liable to slip and shift their position; the mask, on the other hand, being accurately moulded to the face, answers admirably, inasmuch as in its use a

fixed point is obtained. But notwithstanding that the leather is perforated and lined with soft material, some patients complain that it is hot and uncomfortable, and retains the perspiration. Recently, therefore, I have employed a poroplastic felt cap in its stead. The felt, whilst rendered plastic in the ordinary way by the application of heat in the steam oven, is accurately moulded to the vault of the skull, and there kept in position till cool, when it retains the form of the head. Thus a close-fitting cap is obtained which will shift neither in a horizontal, vertical, or lateral direction, and in this respect secures all the advantages of the leather mask. At the same time, the porosity of the felt allows of the free passage of the perspiration, and hence the cap does not give rise to any heat of the head. To its front the plate of the nose truss is secured by rivets. Any form of nose truss which may be thought advisable can in this way be applied, according to the nature of the deformity and the direction, etc., in which it is desired to bring pressure to bear upon the nose. The form of truss shown in the accompanying woodcut was employed for correcting slight lateral deformity of the cartilages, the result of congenital dislocation of the anterior end of the septum from the superior maxillary crest. It consists of a spiral high-tempered spring, with a pressure pad fixed to its distal end. The spring is attached by a butterfly screw to the truss plate in such a manner that the amount of pressure can be accurately regulated. In this patient, a girl of nine years, the dislocated end of the septum, which formed an unsightly red prominence just within the nostril, was shaved away by a narrow-bladed scalpel, and the rest of the septum reposited forcibly in the middle line previously to the poroplastic cap and truss being applied.—*Lancet, Feb.* 25, 1888, *p.* 367.

42.—ON INTUBATION OF THE LARYNX—A SUMMARY.

By Charters J. Symonds, M.S., M.D., Assistant Surgeon to, and Surgeon in Charge of Throat Department, Guy's Hospital.

The modern method of intubation of the larynx is due to Dr. J. O'Dwyer, of New York. As this author points out in his first paper (New York Medical Journal, August 8th, 1885), Bouchut, so long ago as 1858, had used short tubes in cases of diphtheria, at

the time when Trousseau was advocating tracheotomy. His success, however, was not sufficient to encourage further trial, and the method was condemned by a committee, of which Trousseau formed a member, in favour of tracheotomy. In the paper above referred to, O'Dwyer says that he had been experimenting since 1880, that is, for five years, before he published his results. He mentions three cases of recovery, and modestly concludes:—"I leave all considerations as to the value of this method of treating croup and other stenoses of the larynx to be determined by a more extended trial in the future." He believed the method would be found valuable in chronic stenosis of the larynx, and to facilitate the removal of the tube after tracheotomy. Dr. O'Dwyer's method was taken up at once by Drs. Waxham and Ingals, both of whom have written several papers on the subject. The most important of the former will be found in the Journal of the American Medical Association for July 23rd, 1887, and earlier communications in the Chicago Medical Journal, March, 1886, and Journal of the American Medical Association, October 24th, 1885. The leading paper by Dr. Ingals will be found in the New York Medical Journal, July 2nd and 9th, 1887 (see *Retrospect*, vol. 86, *p.* 41); and in an earlier paper, published in the Journal of the American Medical Association, of February 6th, 1886, the author gives illustrations of the various instruments employed. The set of instruments consists of five laryngeal tubes, an introducer, extractor, and a gauge. The tubes vary in length from $1\frac{1}{2}$ in. to $2\frac{1}{2}$ in., the calibre of the largest being about $\frac{1}{8}$ in. by $\frac{1}{4}$ in., that of the smallest about half that size. At the upper end of the tube is a diamond-shaped head with rounded angles, which rests upon the ventricular bands and prevents the tube from slipping into the trachea. The anterior aspect of the head is bevelled off where it rests against the base of the epiglottis, and at its anterior part is a small eye through which a double thread is passed. Below the neck is a fusiform enlargement to make the tube self-retaining. Each tube is fitted with a jointed obturator, in the upper end of which is an aperture to receive the introducer. The stem of the introducer is fitted with a sliding tube, which may be pushed forwards by a thumbpiece to release the obturator from the laryngeal tube when the latter is in position in the glottis. The extractor is constructed on the principle of a dilator. When used the closed blades are passed into the end of the laryngeal tube; a lever in the handle is then pressed down to open the blades, which impinge against the inner aspect of the tube and hold it firmly so that it may be withdrawn. Dr. Ingals and others recommend that those not familiar with laryngology will find it profitable to practise on the cadaver.

The Operation.—The child is wrapped in a shawl and held in the nurse's arms; a gag is inserted on the left side. The left index

finger is passed over the tongue behind the epiglottis, the arytenoid recognised; then the tube is passed under the forefinger and directed into the larynx, and, when through, the glottis is held by the index finger while the obturator is disengaged. The thread attached to the tube is allowed to remain till the child has cleared the trachea and got over the dyspnœa caused by the introduction; the finger is then once more placed upon the head of the tube, the thread divided and withdrawn. The object of the silk is to enable the tube to be withdrawn, should it have been passed into the pharynx. No anæsthetic is used, nor does the child complain of pain. Should any difficulty be experienced in the first attempt, the apparatus should be withdrawn to give the child air.

Besides the difficulty of finding the glottis, the introduction of the tube is attended with another danger, and that is the pushing-down of the membrane into the trachea and the closure of the lumen. This is the more likely to occur if the operation be undertaken late in the disease, at a time when the membrane is beginning to separate. In such a case tracheotomy would probably become necessary. Though such skilled operators as O'Dwyer, Ingals, and Waxham appear to find no difficulty attending the insertion of these tubes, a perusal of the discussion on their papers shows that such is not the experience of all, and one can understand that the movements of the larynx and the struggles of the child render it by no means easy to find the glottis. There can be no doubt, therefore, of the wisdom of the advice to practise the procedure on the cadaver. Indeed, so difficult has the introduction been found by some American practitioners that they have condemned the tubes on this account.

After-Treatment.—The tube, it is stated, is cleared by the ordinary respiratory efforts, membrane being as freely expelled as through a tracheotomy tube. If the tube becomes blocked, it will be expelled, a result which Dr. Ingals states occurs in about one-fourth the cases. Its immediate reintroduction is necessary in most cases when expelled on the first or second day, and here is no doubt one of the great dangers of the method; for while a nurse can insert a tracheotomy tube, a skilled hand is necessary to replace the laryngeal tube, and in the meantime the child may be asphyxiated. In one case the tube was expelled in an hour, and though the child was almost moribund at the time of its introduction, a rapid recovery ensued without the further use of the tube.

The authors recommend that the tube be removed in all cases from the fourth to the sixth day, to avoid the dangers of undue pressure. The necessity for its reinsertion will depend upon the dyspnœa. O'Dwyer mentions two cases in which the tube was retained ten days, and Dr. Waxham one of fourteen days, without evil result. In removing the tube it seems best to give an anæs-

thetic, for the difficulty of guiding the extractor into the small orifice can easily be imagined.

The greatest difficulty as well as danger is the administration of food. The head of the tube interferes with the movement of the epiglottis, and the child is unable to swallow fluids without coughing, and, in consequence, suffers terribly from thirst. Dr. Ingals states that most will swallow half a teaspoonful at a time if the head be well bent forward and to one side, while some will swallow without difficulty. So great, however, is the danger of pneumonia, from the entrance of even small quantities of food into the trachea, that it is necessary to prohibit fluids, and to feed the child on soft solids, giving the fluid by enemata. The distress from thirst is described as being very great, and one speaker (Dr. Strong) condemned the method on this ground, believing that he had lost many of his cases from the traumatic pneumonia set up by the entrance of food, thirty-one out of thirty-two cases having died.

As to remedies, the writers referred to recommend in all cases of diphtheria small but frequent doses of mercury, gr. $\frac{1}{3\frac{1}{2}}$ of perchloride every half hour, or half-grain doses of calomel every three or four hours; attention at the same time being given to the condition of the heart and lungs. Dr. Ingals recommends the following mixture every two hours, alternately with $\frac{1}{2}$ gr. to 1 gr. of calomel, namely, tr. nuc. vom. ♏ i; amm. carb. gr. i; syr. ipecac. ♏ xii; pot. acet. gr. iv in syrup of liquorice.

Dangers.—There seem to be several dangers special to this method, which it is well to enumerate.

1. The tube may be coughed out, and before skilled assistance arrives the child may die.

2. The tube may slip into the trachea. At first sight this would appear to be a frequent danger, but the accident does not often appear to have occurred. One fatal case is mentioned, while others have been saved by extracting through the glottis. It must be stated, however, that the tube used in the fatal case was not O'Dwyer's pattern, but a smaller form.

3. The tube may be plugged with membrane, and, not being expelled, fatal stenosis occurs. One such case is recorded.

4. The membrane, as mentioned above, may be pushed down by the tube, "crowded down," and give rise to increasing dyspnœa.

5. The great danger is the entry of food into the trachea, and the subsequent pneumonia.

From this it will be seen that the after-treatment is by no means free from danger, and would appear, in some cases at least, to be attended with as much trouble, and to require even more skill than after tracheotomy.

Results.—Dr. Ingals has collected 514 cases, with 134 recoveries, or 26·7 per cent. The greater number of these occurred in his own practice and in that of O'Dwyer and Waxham, all skilled operators.

Dr. Waxham reports 136 cases of his own, with 37 recoveries, or 27·2 per cent.; and of these 72 were three years of age or under, with 16 recoveries, or 22 per cent., the youngest to recover being nine months; 64 were over three years, and of these 21 recovered, or 32·8 per cent. It is stated that in every case membrane was observed before operation, and it is clear from the reports of the cases that in the vast majority death would have speedily occurred had not the operation been performed. The suggestion, therefore, that the success is due to early operation must, in the face of the reports, be silenced. Dr. Waxham concludes that 25 per cent. will be saved, and that, for his part, he will never perform tracheotomy again. So great a measure of success has not attended the practice of others. Thus Dr. Strong, in the discussion on Dr. Waxham's paper, reported 32 cases, with 31 deaths, the fatal issue being attributed to traumatic pneumonia, extension of membrane, and actual starvation. Another speaker, Dr. Hatfield, recorded 10 cases, all fatal. If the results obtained by Ingals and Waxham be contrasted with tracheotomy, the new operation stands first as a means of saving life. Tracheotomy under four is admitted to be, on the whole, unsuccessful. Dr. Ingals estimates the recoveries at 15 to 20 per cent.; Trousseau for all cases, 20 per cent., or 1 in 5. Individual operators can, no doubt, show better results than these; thus Dr. Mudd, in contrasting intubation and tracheotomy, gives as occurring in his own practice and in that of his firm 171 cases, with 46 recoveries, or 26·9 per cent. His later cases did better, for out of the last 32 no fewer than 16 recovered. This success he attributes to the milder character of the disease, and to the fact that the operation was performed earlier. Those who see much of tracheotomy know well how the results vary with the character of the disease, and the same influences act, of course, for or against intubation. I remember a series of 19 tracheotomies at Guy's with 1 death, followed by another series in which nearly all died.

Amongst the special advantages claimed for intubation are the rapidity with which it is performed, and the ready consent of friends; the after-treatment is less tedious, and the results are as good as tracheotomy. It is, moreover, urged that expectoration occurs more readily than through the tracheal tube—a result one would scarcely have anticipated. Again, it may be performed at a time when tracheotomy could not be urged.

Many of these points place intubation for general purposes before tracheotomy, but a perusal of the dangers above enumerated will qualify this conclusion to some extent, and leave us with the impression that the new operation will require as much skill, both in its performance and in the after-treatment, as tracheotomy. As has been pointed out by the authors alluded to, and from whose writings, as will be understood, all these facts have been taken,

intubation, besides giving relief and saving life in diphtheritic laryngitis—in which disease it should be performed early—is also specially of value in spasmodic croup, œdema of the larynx and in chronic stenosis. It has, I think, been proved that these tubes can be worn for ten to fourteen days without injury, a fact which leads me to hope that for laryngeal stenosis due to catarrh, the operation may be performed early without any injurious effect, and at a time when we should not recommend tracheotomy, on account of the dangers which we know to be inherent in that operation itself. These tubes have also been of great value in aiding the removal of the tracheotomy tubes in cases where difficulty arises. In scald, again these tubes may be useful. Not having had any experience with this method of intubation, it would be unwise for me theoretically to compare it with tracheotomy; this has been done, however, by two American practitioners, Drs. Strong and Mudd, who claim for the latter operation greater or equal success with less difficulty. To all, the difficulty of applying antiseptic remedies, and of treating the trachea locally, will be apparent, and we must wait for personal experience before being convinced of the ease with which membrane is expelled, or with which it may be removed by tracheal forceps through the tube. The method certainly commends itself at once in those cases where we stand hesitating whether to perform tracheotomy to-night or wait till to-morrow; and in all cases where the parents refuse their consent to tracheotomy, we must feel it our duty to employ this method, to which approval seems generally given. In face of the difficulty of introducing the tube, it would seem always wise to be prepared to tracheotomise the patient (when consent has been obtained), more especially should the membrane be pushed before the tube, and the dyspnœa thereby increased. Therefore, should anyone be about to perform intubation without the alternative of tracheotomy being granted him, he will have to prepare the friends of his patient for a possible speedy termination of the case. Such a result is exceptional, even rare, according to the record of cases. Our greatest difficulty will be with the feeding. The use of a stomach tube has been tried, but found to give so much distress as to be abandoned; still, with older children it may be successful.

As showing the tolerance of the larynx of mechanical interference, I may refer to two cases of chronic stenosis, in one of which complete recovery ensued, and in the other great improvement. The first was a child, aged 3, whose thyroid cartilage, with probably the cords, had been wounded in tracheotomy. The case was severe diphtheria, and the wound became very unhealthy. A catheter was first passed by the mouth on a stylet, under the finger, as described under intubation, but was soon expelled. Later, dilatation was effected by Mackenzie's dilator at frequent intervals, the tracheotomy wound was allowed to close, and the boy recovered

the partial use of his voice. The other was the case of a woman, about 60, admitted for laryngeal dyspnœa, for which tracheotomy became necessary. For many months she lost all power of phonation, and was never able to dispense with the tube. Under chloroform the tracheal wound was enlarged, some granulation tissue removed, and a rubber tube passed from the wound through the glottis, and retained by a thread. This was changed from time to time by passing a loop of silk through the rubber tube and the end of the catheter; the catheter was passed up into the mouth, and the tube drawn through the glottis; the loop was cut and the silk withdrawn, the short piece of tube remaining in the trachea and glottis, and retained by a piece of silk tied round its centre, brought out of the wound, and tied round the neck. Through this she was able to breathe and to speak, and, finally, by wearing a tube with an opening in its upper surface, regained her voice. She was not, however, able to dispense with the tube. O'Dwyer's tubes would have been useful in both these cases.—*British Medical Journal, Nov.* 19, 1887, *p.* 1098.

43.—ON TRACHEOTOMY IN DIPHTHERIA.

By Edmund Owen, F.R.C.S., Surgeon to St. Mary's Hospital.

When seeing for the first time a child with extreme dyspnœa, it is often impossible to say whether the laryngeal obstruction is due to a simple, acute catarrhal inflammation or to diphtheria. The determination of this matter is, however, of secondary importance; the admission of air into the lungs is the one of urgency. In every case it is expedient to isolate the child at once—to get him, if practicable, into a room at the top of the house, destitute of heavy furniture, carpets, and hangings. Not infrequently after operating on a case of supposed simple laryngitis the fact of its being of diphtheritic origin is disclosed, either by the observation of grey patches upon the fauces, of albumen in the urine, or worse still, by unmistakeable diphtheria attacking, and perhaps carrying off, other members of the same household.

As regards the *When to operate*:—When the air is entering the lungs in such small volume that the child is evidently suffering from the want of it; when expiration is prolonged and noisy as well as inspiration, for this shows serious mechanical obstruction of the glottis; when the child is restless, in terror, or unable to sleep, tossing about the bed, or putting his fingers into his mouth as if to rid himself of something which is blocking the air-way; when the face is becoming dusky; and lastly, "Whenever in doubt, operate."

How to Operate.—Certainly not by a "tracheotome." It is one thing to introduce such an instrument into the windpipe of an adult subject in the mortuary, and quite another to effect that

result in a living child. For in attempting it the tracheotome would very likely slip from off the trachea, and wound the vertebral column; or compressing the trachea, would pass through the posterior as well as the anterior wall, and perhaps enter the œsophagus.

[There were many objections to the use of O'Dwyer's instruments for intubation of the larynx, as a substitute for tracheotomy.]

Where to Operate.—As high in the trachea as possible, for the lower that the incision is made down the neck the more deeply is the trachea placed, and the greater is the danger of wounding irregular arteries, and inferior thyroid veins. Wounded veins are, as a rule, easily managed by forci-pressure forceps, but should any larger vessel be cut than those usually found in the middle line, the bleeding might be troublesome. It is best to go quietly through the operation, securing the bleeding vessels as they appear. The less that the scalpel is used, and the more that the tissues which lie over the windpipe are torn through with forceps and director the less is the trouble with bleeding. The scalpel should be used only for incising the skin and the trachea, everything between these structures being torn through with a pair of dissecting forceps, or else quietly displaced. When some of the highest rings of the trachea are bared and visible, or are felt quite naked by the tip of the finger, the trachea may be steadied by a sharp hook and opened from below upwards, by a kind of stab with the scalpel, the edge of the blade being directed upwards. Then comes the rush of air, blood, and mucus through the wound; the tube is introduced, and the child breathes easily through it. As a rule the surgeon tries to open the trachea between the cricoid cartilage and the isthmus of the thyroid body, but he will do well not to pay too much respect to the integrity of either of these structures. By all means should he divide the cricoid ring if the neck be short, and the available part of the trachea small. Probably the best operation is that in which the cricoid cartilage and the first ring or two of the trachea are divided—laryngo-tracheotomy as it is called. If the student will only bear this in mind he will be sure to keep his line of operation high, and will consequently simplify the procedure to the utmost. Many an operator has got into difficulties by reason of his attempting to open the trachea low down. The skin incision should be begun over the lower border of the thyroid cartilage, and should be continued down, in the exact middle line, for about $1\frac{1}{2}$ inches. A small flat pillow, or a small blanket folded across and across, should be laid under the shoulders, and the head should hang well back over the top of the pillow or folded blanket, so as to draw the trachea well out of the chest; and, without any question, before proceeding to operate, chloroform should be administered. Of course if the child be moribund, or apparently dead, as the surgeon is about to open the trachea, it will be not only needless, but prejudicial to the chance of success, to administer an

anæsthetic. Otherwise, the only reason for his not administering it is that the surgeon has none at hand, and has not time to procure any. Indeed, the urgency may possibly be so great that the surgeon may be compelled, single-handed, to open the trachea with a pen-knife, and extemporise a tube with a piece of quill pen, or with a bent hairpin.

If, after the introduction of the tube, the child cease to breathe, artificial respiration must be resorted to; by this means a child who is to all appearances dead may happily be brought round.

If an abstract may be drawn from the foregoing condensed remarks, and then rendered in a personal form, it would run thus:—Acute laryngeal obstruction is usually diphtheritic. Perform tracheotomy as soon as the dyspnœa is becoming serious; you cannot operate too early. Keep your incision high and, of course, in the exact middle line, using the scalpel only for skin and cartilage. Take your time; and do not attempt to open the trachea until you have thoroughly denuded the topmost rings.—*Medical Press and Circular, Dec.* 21, 1887, *p.* 585.

44.—OF THE TREATMENT OF STENOSIS OF THE NASAL DUCT BY THE INTERMITTENT NOCTURNAL USE OF REMOVABLE STYLES.

By Arthur H. Benson, M.A., F.R.C.S.I., Ophthalmic and Aural Surgeon to the City of Dublin Hospital.

Stenosis of the nasal duct, occurring as it does from so many and various causes, cannot be rationally or successfully treated by any single method. Each case must be separately considered, and that method adopted which, for that particular case, seems most suitable.

I have no intention of entering at large on a consideration of the various causes of stenosis, nor yet of considering all the methods of treatment that from time to time have been practised or recommended, but shall confine myself to a method which has, in my hands, proved of great service in a certain number of cases, and which is, I think, capable of considerable extension.

All who have much experience of lachrymal obstruction must have now and then come across cases where the ordinary methods of treatment failed to procure a permanent passage through the nasal duct. As long as the patient was under treatment, and could have the probe passed once a week or even once a fortnight, all went well; but when he went home to the country (for it is in the case of those living at a distance from town that the greatest difficulties arise) the old trouble returned, and, three or four months later, the patient whom you marked off as cured reappears with the tears still flowing over his cheek, with the same trouble present in every particular, for which he sought relief at your hands only a few months before. You have then to cut and probe as

before, and commence again the tedious and painful treatment, your patient having less confidence, and you less assurance of success.

After some weeks or months of this treatment your patient again goes home, soon to experience afresh the old trouble, for the treatment of which he will probably then seek relief elsewhere. Few patients will return a third time to undergo a painful course of treatment which has failed to give adequate relief.

In a certain number of cases passing probes (after division of the canaliculus) for a few days or weeks gives permanent relief, and nothing further is necessary; but, in a large majority of cases, especially where there is old standing fibrous thickening of the lining of the duct, or where there is bone disease (caries) in the immediate region of the sac and duct, the treatment has to be continued for months, or even years, before a really permanent channel has been provided for the tears. It is in such cases that disappointment and discontent affect equally the surgeon and his patient, and it is for these cases that I have sought a remedy in what I have called "removable styles"—removable, I mean, by the patient himself.

At the Brighton meeting of this Association last year I ventured to suggest the plan of teaching the patient to introduce and remove his style himself; I had then only tried it in a very few cases. The Section greeted my suggestion with but slight favour, and thought it a dangerous innovation to allow a patient to have anything to do with the treatment of his own case.

Since last year I have taught a considerable number of patients, both private and hospital, to manipulate the styles with ease, and have had the great pleasure of seeing some most obstinate and, I may say, almost incurable cases under the old method continue ever since free from trouble, the patient wearing the style at night and removing it again each morning.

The method which I adopt is to slit the canaliculus, either upper or lower, with Weber's knife, and pass probes in the ordinary way for some days or weeks or months as required. If the case is one of extensive narrowing, or if there is much bone disease, I often leave in a leaden style for some days, removing it now and then for the purpose of syringing and cleaning. As soon as the tenderness resulting from the first operation has subsided, I get the patient to remove the style himself, and when he has gained some confidence in doing this he can readily be induced to attempt the introduction of it. If he is, in the first case, shown before a looking-glass the way you put it in, he will soon get into the way of doing it himself. It is advisable at first to remove the style only for a few hours, and gradually increase the time till it can be kept out all day. When well in practice a patient can introduce and remove his styles without the aid of a looking-glass at all. As soon as he is able to do this for himself I allow him to go home to whatever part of the world he came from, fully assured that so long as he

can introduce the style each night he will have no return of the obstruction. My directions then are to introduce the style each evening on going to bed, and to remove it in the morning when dressing, before putting in his artificial eye and false teeth, and he finds no greater difficulty in doing one than the other. If at any time he does experience difficulty, or fails to introduce the style, it is time for him to come up again to have it examined into; but so far my experience has only afforded a single case where the patient, once skilled in the use of the style, failed to get it in at home, and I am therefore convinced that there is no real difficulty in the operation after the initial timidity of the patient has been overcome. As well might a dentist require his patients to come to him to have their false teeth put in, or an oculist require his cases of enucleation to attend each morning and evening to have their artificial adornments adjusted, as a style-wearer be required to dance perpetual attendance on us to have his tear passage styled each day.

As the style is only required to be worn by night it is not necessary to risk anything for appearance, hence it may be left long, and bent with a good curve over the lid, so that there is no fear whatever of the style getting lost in the sac, an accident of not infrequent occurrence where a short style is used with a large sac.

Lead is the material of which I make the styles; common lead wire of different sizes, which can readily be cut to length, moulded to shape, and smoothed off in any desired way to suit each case.

When the style has thus been used nightly for some months, according to circumstances, it may be worn at longer intervals every second night, once a week, once a month, until finally abandoned, to be again resumed should the slightest evidence of narrowing of the passage appear.

The following are brief notes of some of the cases which I have taught to use the removable style. I hope others will be induced to try this plan, which only requires a little intelligence on the part of the patient, and a good deal of patience on the part of the surgeon, to make it a success.

[Four of Mr. Benson's cases are omitted for want of space.]

Case 1.—Miss K. P., aged 20, from County Limerick, had been under treatment for some years for stenosis of both nasal ducts. I first saw her in June, 1885, and found one canaliculus had already been operated on (slit) by her previous attendant. I passed probes and forced the obstruction; the other canaliculus was slit, and probes were used there also at intervals for six weeks, after which she left for home apparently cured. She came back again in February, 1886, that is, about six months after her return home. She stated that for some time she had felt the eye quite well, but that gradually it got back into its old way, and was then, on her return, as bad as ever. Six weeks more of the same treatment, and she again

returned home, thinking that now for certain she was well, but the same sequence of events necessitated her return again in a few months (August, 1886). This time I taught her to use the style herself; she readily learned to do so, and in a short time returned home, and has since then—a year ago—had no need to return, as she can herself put the style in and take it out quite easily. I saw her in April last, and since heard from her; she could introduce the style easily, and had left it out for some months at a time, and again used it without difficulty. There was still some slight tearing, but the canal was pervious, and no accumulation occurred.

Case 2.—Mr. H., aged 38 (prox.), of Dublin, had been under various practitioners, and had had his right canaliculus slit and probes passed many years before for the cure of stenosis of the duct. When I first saw him, January 15th, 1884, he had a free opening into his right sac, the inferior canaliculus having been slit. Pus was freely secreted by the dilated sac, and regurgitated into the conjunctiva. The left sac was also distended, secreted pus, and was cut off from communication with the nose by a dense fibrous stricture. Both ducts were treated by probing in the usual way, and repeatedly syringed with astringent and antiseptic applications, etc. Leaden styles were introduced and left in for a week at a time, and by slow degrees the case got better, till, in July, 1886, he left off using probes or styles at all, and everything seemed well till November, 1886 (that is, four months after he ceased to have the probes passed), when he returned with the old condition re-established. I then taught him to use the removable style himself; he very quickly became skilled in introducing it, and has since had no trouble whatever with his eye, that is, for nine months. I saw him quite recently, and his eyes are looking perfect. He can put in and take out the style with ease, and does so each night and morning into the left eye, but for the right eye he now requires no styles.

I have never heard of any ill result occurring from a patient using the style himself, and fear none, once he has, under the eyes of the oculist in attendance, learned what to do. I do not for a moment pretend that all patients can be taught to introduce a style, nor is it in all cases, perhaps, advisable that they should; but my contention is that most patients can be taught, and that many who would otherwise have to remain uncured, can by this method obtain permanent relief.

It is especially in the case of persons residing far from town, and with limited means, that the difficulties attending the constant introduction of the probe by the surgeon are most felt, for many of these cases are so tedious that the requisite time cannot be devoted to their cure, and the patient returns home little, if at all, benefited in compensation for the pain, expense, and loss of time he has been subjected to.—*British Medical Journal, Nov.* 26, *p.* 1151.

45.—ON THE TREATMENT OF CYSTIC GOITRE.

By T. Mark Hovell, F.R.C.S.Ed., Senior Surgeon to the Hospital for Diseases of the Throat, London.

My reason for bringing forward a method of treatment by no means new is that, although it is mentioned in all the principal English and American works on Surgery, the prominence it deserves is not accorded to it, and recently cases have been published in which the treatment adopted has entailed serious risk to the patient, whose safety would not have been thus unnecessarily jeopardised had the measures I am about to describe been adopted.

The treatment which I advocated is that introduced by Sir Morrell Mackenzie in a paper read before the Hunterian Society, on January 22nd, 1872, and published by him in the Lancet of May 11th, 1872 (vol. i., p. 642). His method briefly consists in tapping the cyst, and when the fluid has been withdrawn injecting a solution of perchloride of iron through the cannula of a syringe and allowing it to remain for a certain time, so as to convert the cyst into a chronic abscess. It is essential that the trocar should be introduced at the most dependent part of the tumour to ensure subsequently efficient drainage, upon which greatly depends the success of the operation, and it is an advantage to make the puncture where the cyst wall is thin, provided this condition is found in the position mentioned. Care must be taken to avoid a place traversed by a large vein, and when practicable it is well to introduce the trocar as near the mesial line as possible. The spot having been selected, the skin should now be frozen by means of an ether spray, and when anæsthesia has thus been produced, a trocar with silver cannula attached should be passed through the wall of the cyst, the trocar being withdrawn as soon as the cavity is reached, and the cannula pushed further in by means of a blunt-pointed plug. For a large goitre I select a cannula two inches in length, because I found that if it is shorter it is apt to slip out of the cyst, in which case there is often difficulty in reintroducing it by means of the plug, in consequence either of the cyst wall contracting and thereby causing the hole in it to be no longer opposite the opening in the skin, or from the aperture in the cyst wall having closed. When this occurs it is necessary to again use the trocar. For smaller goitres a cannula of proportionate length should be employed. It is not necessary to use a very large cannula; the sizes I employ correspond to Nos. 7, 8, and 9, English catheter gauge. Those smaller than No. 7 are apt to become blocked with discharge, whereas those larger than No. 9 are unnecessary in ordinary cases; should a larger cannula be required during the subsequent treatment of a case, it can easily be introduced. The cannula having been inserted into the cyst, it should be secured in position by a tape passed round the neck. The plug should be

then withdrawn and the contents of the cyst allowed to escape, care being taken not to squeeze the cyst lest air should be sucked into its cavity. One or two drachms or more, according to the size of the cyst, of a solution of perchloride of iron (two drachms of the salt to an ounce of water) should be now injected into the cavity by means of the syringe just described, held vertically, and the plug reintroduced to prevent the solution from escaping. The reasons for using the aqueous solution of the salt as mentioned are that it is more astringent than either the tincture or liquor ferri perchloridi (B.P.), and it is devoid of the free hydrochloric acid which they contain. The syringe used for this purpose has its nozzle fixed at an obtuse angle with the cylinder, the object of this arrangement being to allow any air which may be in the syringe, when held vertically, to rise to the top of the solution, and therefore render impossible the injection of air into a vein. This occurrence is further prevented by a button placed on the piston of the syringe above the cylinder, the button being screwed down for about an inch after the cylinder has been filled with the solution for injection, causing, by this means, the piston to be about an inch shorter than the cylinder, and consequently incapable of emptying it. The nozzle of the syringe is made to taper to the point in order to allow it to accurately fit any cannula which may be used for this operation. The solution of iron having been injected into the cyst, it should be allowed to remain there for seventy-two hours. During this period the cyst will refill to a greater or less extent, and if inflammation has been set up, it will be marked by pain and tenderness over the tumour, and there may, in addition, be signs of slight inflammation in its immediate neighbourhood. Whilst the cyst is swelling care must be taken to loosen the tape which holds the cannula to a corresponding degree, otherwise the head of the cannula will be pressed against the skin and may cause it to slough; the tight tape will also greatly add to the patient's discomfort. During the after-treatment of the case, tightness of the tape may generally be considered to indicate distension of the cavity of the cyst consequent upon the escape of pus being retarded by the cannula having become obstructed. If on withdrawing the fluid at the end of seventy-two hours it is found to contain blood or to show no signs of suppuration, an injection of iron must again be made and retained in the sac for seventy-two hours as before by means of the plug, this process being repeated until suppuration has been produced. Poultices should then be applied, and in some cases the plug may be permanently removed, but usually it is better to keep it in position for a few days in order to retain some pus in the cyst and increase thereby the amount of inflammation. The quantity of pus, however, which is retained should not be large, and to ensure this the plug must be removed several times during the day, to allow the discharge which has collected to escape.

Whilst the plug is retained in the cannula the temperature generally ranges between 100° and 103° F., but quickly falls after the plug has been removed and the free exit of pus permitted; but should it not do so (and from the character of the discharge it appears unnecessary to keep up the inflammation), the cyst should be washed out several times a day by the injection through the cannula of tepid water containing some antiseptic.

Throughout the subsequent treatment of the case it is most important that thorough drainage of the cyst should be maintained; and it should be constantly borne in mind that pyrexia persisting after the plug has been removed from the cannula, or a sudden elevation of temperature during the later stages of the case, is almost invariably due to the cannula being blocked, and consequently causing retention of pus in the cavity of the cyst. With the view of preventing this occurrence I have for some years past employed a piece of Ellis's drainage tube, which consists of a piece of silver or plated wire wound spirally to form a tube. I usually allow the turns of wire to remain touching one another, but in some cases it is well to slightly separate them, which is easily done by making gentle traction. To apply it, I supply a piece of tubing which is a size smaller than the cannula, and consequently passes easily through it; and having ascertained the precise length of the cannula by measuring the plug belonging to it, I introduce the tubing until it projects about half an inch beyond it into the cyst, and then secure it in that position by fastening its other end to the tape around the patient's neck. By this means although the more solid portions of the discharge gather round the cannula and the piece of tubing which projects from it and there remains, the fluid portion readily passes between the coils of wire into the lumen of the tube and thence away. To further ensure efficient drainage it is necessary to wash out the cyst with tepid water, to which an antiseptic may be added several times a day, and before doing so to remove the Ellis's tubing. In some cases the mere injection of water into the cyst is not sufficient to entirely remove all the thicker portion of the discharge, which, carried by the outward flow of the water, collects around the inner opening of the cannula and blocks it. When this occurs, a fine probe introduced through the cannula as soon as the syringe is withdrawn, and moved about so as to keep the end of the tube clear, will cause the previously obstructing pieces to come away with the water. It is useless to attempt to employ Ellis's tubing without a cannula, or to leave it long in position without being removed, because the granulations grow between the coils of wire and choke the lumen of its tube. Care must be taken to bend the inner cut extremity of the wire so that it does not prick or scratch the wall of the cyst. Constant retention of a certain amount of pus may be caused by the cannula projecting too far into the cyst, and consequently only

allowing the escape of the overflow; the existence or not of this state of affairs can be easily determined by removing the cannula and noticing its colour, the portion which projects into the cyst being always more darkly stained than that which is in contact with the tissues.

It sometimes happens that after a few weeks the discharge becomes thin, and no appreciable diminution in the size of the cyst takes place from week to week. This condition is usually produced by want of tone on the part of the patient, causing the granulations to become flabby and the healing process generally less active. To remedy this, in addition to tonics and a more generous diet, it is well after each time the cyst is washed out to inject a solution of chloride of zinc (fifteen to thirty grains to an ounce of water) into the cyst, and allow it to escape through the cannula, and to continue to do so until, from the ready way in which the walls bleed when touched with a probe and other indications, it is seen that the granulations have reassumed a healthy aspect. A cannula should be retained in the cyst until its cavity is completely obliterated. Provided that efficient drainage is obtained through the cannula which was at first introduced, it is a mistake to remove it until the cyst has contracted around its inner extremity and the granulations have begun to block up the aperture. When this takes place the cannula should be replaced by one of the same gauge, but not more than a quarter of an inch shorter, which should likewise be retained until the granulations begin to obstruct its inner orifice, when it should be replaced by a cannula again not more than a quarter of an inch shorter than the former one. A cannula should be introduced on this system until the sinus made by the first cannula becomes too short to retain it, when the wound may be left to granulate. Sir Morell Mackenzie sometimes uses a silver cannula with a movable shield, which can be fixed at any part by means of a screw. In this way as the cyst contracts the tube can be shortened, and its length accurately adjusted to the requirements of the case. For patients who are not well off it is convenient, because it renders a number of tubes unnecessary; but it has the disadvantage of projecting further in front of the neck in proportion as it is withdrawn from the cyst, and this causes a little inconvenience in the arrangement of the dress and the application of poultices. A multilocular cyst should be treated in the same way as a simple cyst; but if it is found that pus is retained in any one of the cavities, a cannula must be passed directly into that cavity at its most dependent part, and the same treatment adopted for it as is employed in the case of a simple cyst. A cyst containing a large amount of calcareous matter in its walls can only be effectually treated by excision; but this operation ought not to be performed unless the symptoms produced by the tumour demand surgical interference.—*Lancet, Feb.* 11, 1888, *p.* 264.

ALIMENTARY CANAL.

46.—THE RADICAL CURE OF OBLIQUE INGUINAL HERNIA BY INTERNAL ABDOMINAL PERITONEAL PAD, AND THE RESTORATION OF THE VALVED FORM OF THE INGUINAL CANAL.

By Wm. Macewen, M.D., Surgeon to the Glasgow Royal Infirmary.

[We are able to reproduce only Dr. Macewen's description of his Method of Operating, and his Summary of Results. The tables of cases are omitted.]

The principles of this operation may be equally applied to other forms of abdominal hernia, though in this paper its application to indirect inguinal hernia is alone described.

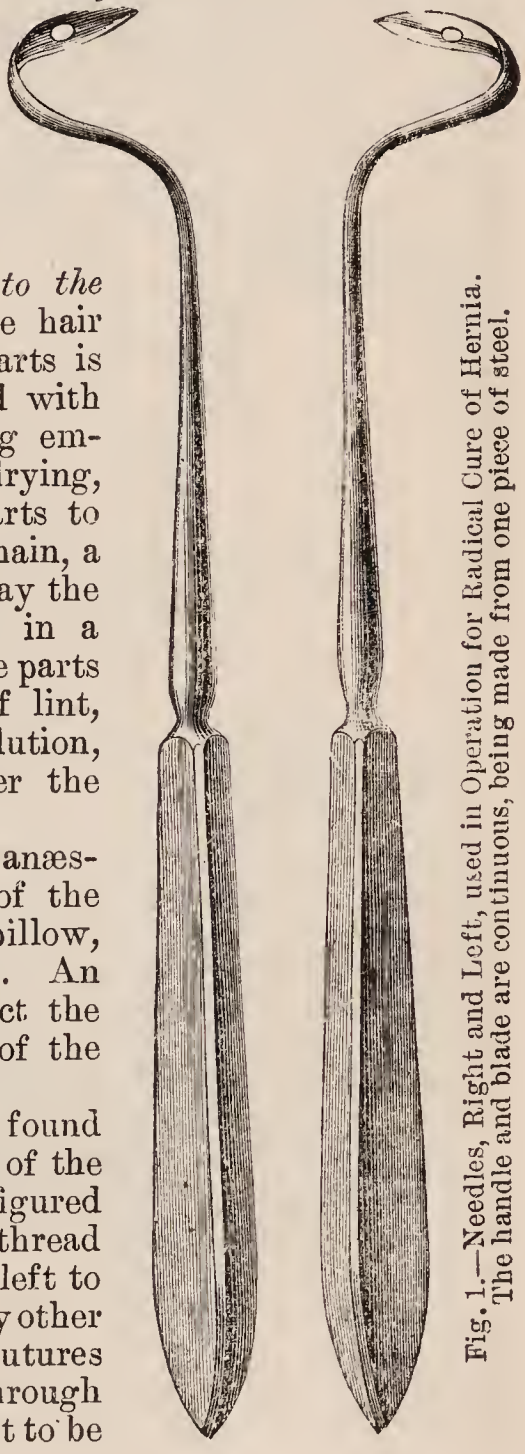


Fig. 1.—Needles, Right and Left, used in Operation for Radical Cure of Hernia. The handle and blade are continuous, being made from one piece of steel.

Preparation of the Parts prior to the Operation.—Before operating, the hair of the pubes and neighbouring parts is closely shaved; the skin is washed with soap and water, a nail brush being employed for this purpose. After drying, turpentine is smeared over the parts to remove any grease which may remain, a little methylated spirit clearing away the turpentine, and leaving the skin in a good condition for operating. The parts are then covered with a portion of lint, saturated with an antiseptic solution, until the patient is placed under the influence of an anæsthetic.

When the patient has been anæsthetised, the limb on the side of the hernia is flexed at the knee by a pillow, which is placed under the latter. An assistant, whose duty it is to retract the parts, stands at the opposite side of the surgeon.

Hernia Needles.—The needles found to be most useful for the insertion of the stitch into the inguinal canal are figured here, one being used for passing the thread from right to left, the other from left to right. They are serviceable for many other purposes, such as for inserting sutures through broad ovarian pedicles, or through masses of omentum which are about to be

removed. Wood's needle might, however, be employed for all the sutures, except the double one introduced into the conjoint tendon. (Fig. 1.)

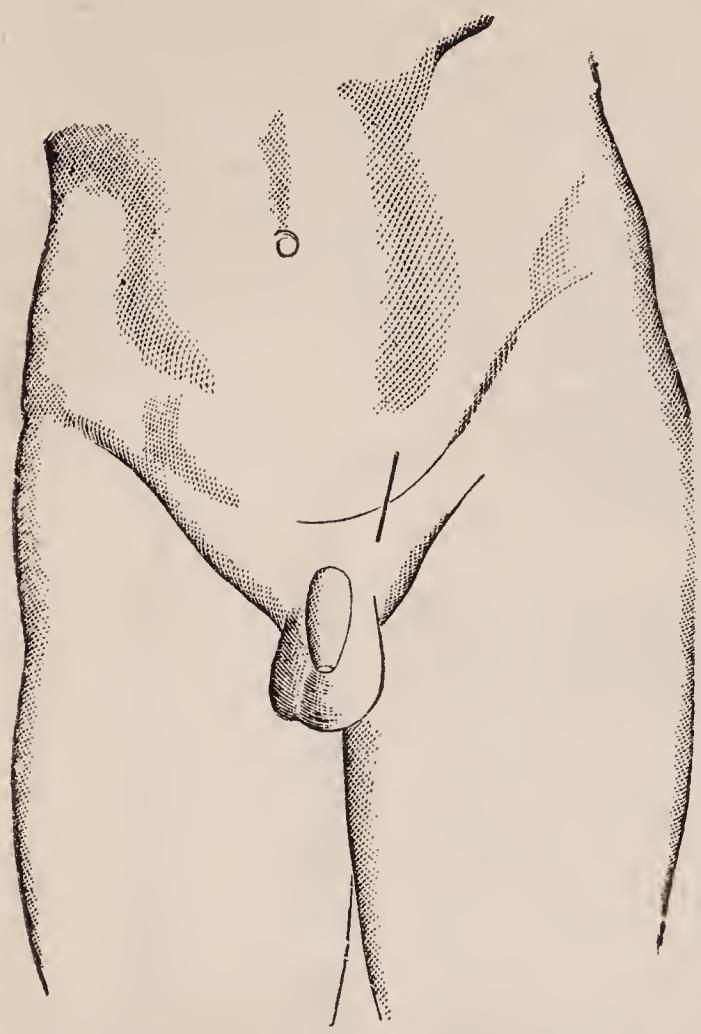


Fig. 2.—Site of Incision. The dark line shows site of incision, exposing external opening of inguinal canal.

Operation.—After having reduced the bowel, make an incision sufficient to expose the external abdominal ring. (Fig. 2.)

An exploration of the sac and its contents is then made, and the finger introduced through the canal examines the abdominal aspects of the internal ring and the relative position of the epigastric artery. The operation may then be divided into two parts, the one relating to the establishment of a pad on the abdominal aspects of the internal ring, the other to the closure of the inguinal canal.

The steps of the operation are as follows :—

A. *The Formation of a Pad on the Abdominal Surface of the Circumference of the Internal Ring.*—(1) Free and elevate the distal extremity of the sac, preserving along with it any adipose tissue that may be adherent to it; when this done pull down the sac, and, while maintaining tension upon it, introduce the index finger into the inguinal canal, separating the sac from the cord and from the parietes of the canal.

(2) Insert the index finger outside the sac till it reaches the internal ring; there separate with its tip the peritoneum for about half an inch round the whole abdominal aspects of the circumference of the ring. (Fig. 3.)

(3) A stitch is secured firmly to the distal extremity of the sac, The end of the thread is then passed in a proximal direction several times through the sac, so that when pulled upon, the sac becomes folded upon itself like a curtain. (Fig. 4.)

Fig. 4.—Folding the Sac. The sac transfixed and drawn into a series of folds.

The free end of this stitch, threaded on a hernia needle, is introduced through the canal to the abdominal aspect of the fascia transversalis, and there penetrates the anterior abdominal wall, about an

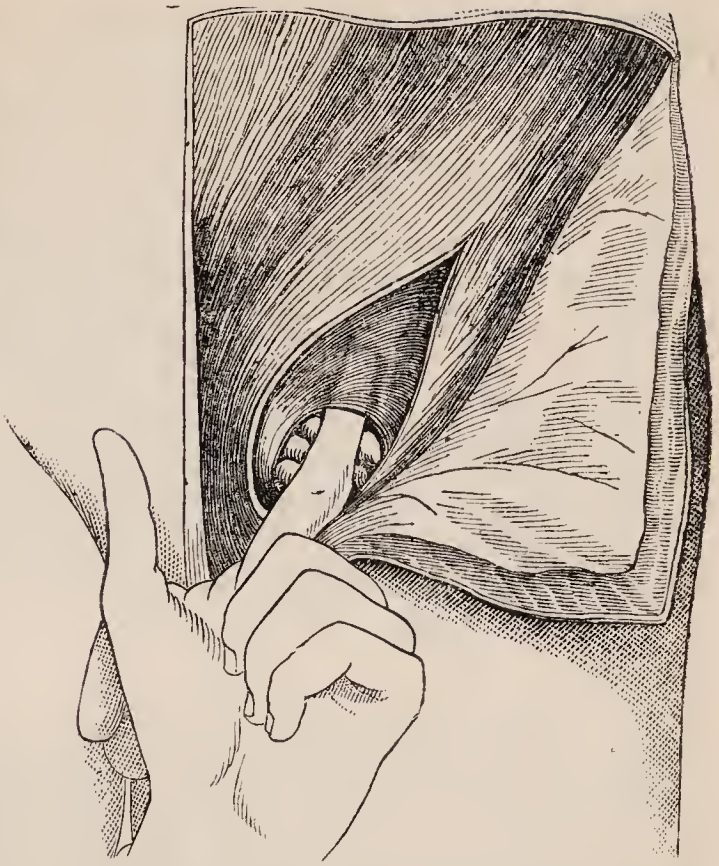


Fig. 3.—Separating the Peritoneum. Showing finger inserted through inguinal canal, separating the peritoneum from abdominal aspects of circumference of internal ring.

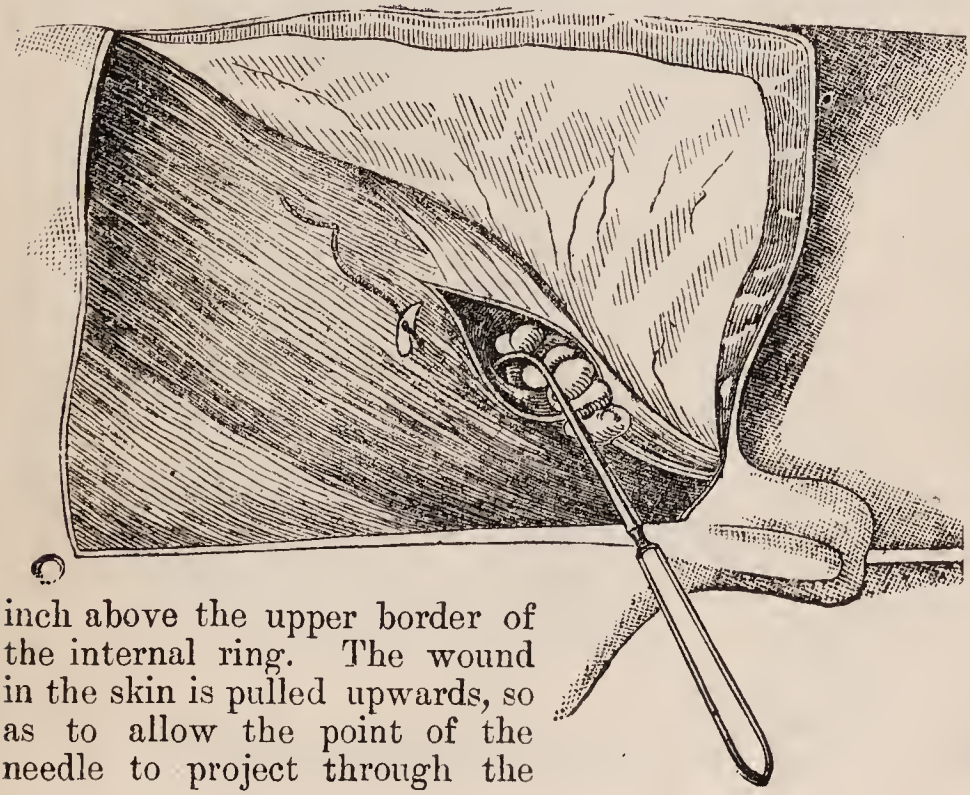


Fig. 5.—Securing the folded Sac above. The hernia needle carrying the thread from the upper portion of the sac through the abdominal muscles from behind forward, about an inch above the internal ring.

inch above the upper border of the internal ring. The wound in the skin is pulled upwards, so as to allow the point of the needle to project through the

abdominal muscles without penetrating the skin. (Fig. 5.)

The thread is relieved from the extremity of the needle, when the latter is withdrawn. The thread is pulled through the abdominal wall, and when traction is made upon it, the sac, wrinkling upon itself, is thrown into a series of folds, its distal extremity being drawn furthest backwards and upwards. An assistant maintains traction upon the stitch until the introduction of the sutures into the inguinal canal, and when this is completed, the end of the stitch is secured by introducing its free extremity several times through the superficial layers of the external oblique muscles. A pad of peritoneum is thus placed upon the abdominal side of the internal opening, where, owing to the abdominal aspect of the circumference of the internal ring having been refreshed, new adhesions may form. (Fig. 6.)

Fig. 6.—Pad covering Abdominal Aspect of Internal Ring.

B. *Closure of the Inguinal Canal.*—The sac having been returned into the abdomen and secured to the abdominal circumference of the ring, this aperture is closed in front of it in the following manner: The finger is introduced into the canal, and lies between the inner and lower borders of the internal ring, in front of and above the cord. It makes out the position of the epigastric artery, so as to avoid it. The threaded hernia needle is then introduced, and, guided by the index finger, is made to penetrate the conjoint tendon in two places; first, from without inwards, near the lower border of the conjoint tendon; secondly, from

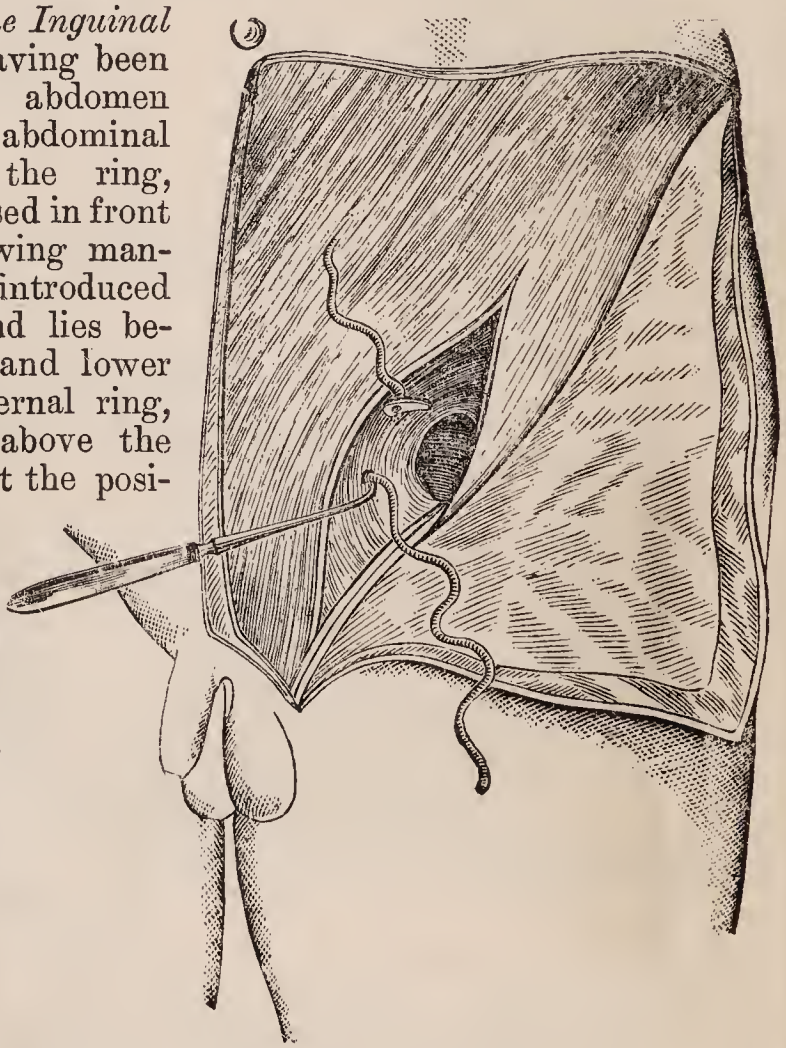


Fig. 7.—The threaded Hernia Needle making double Penetration of Conjoint Tendon.

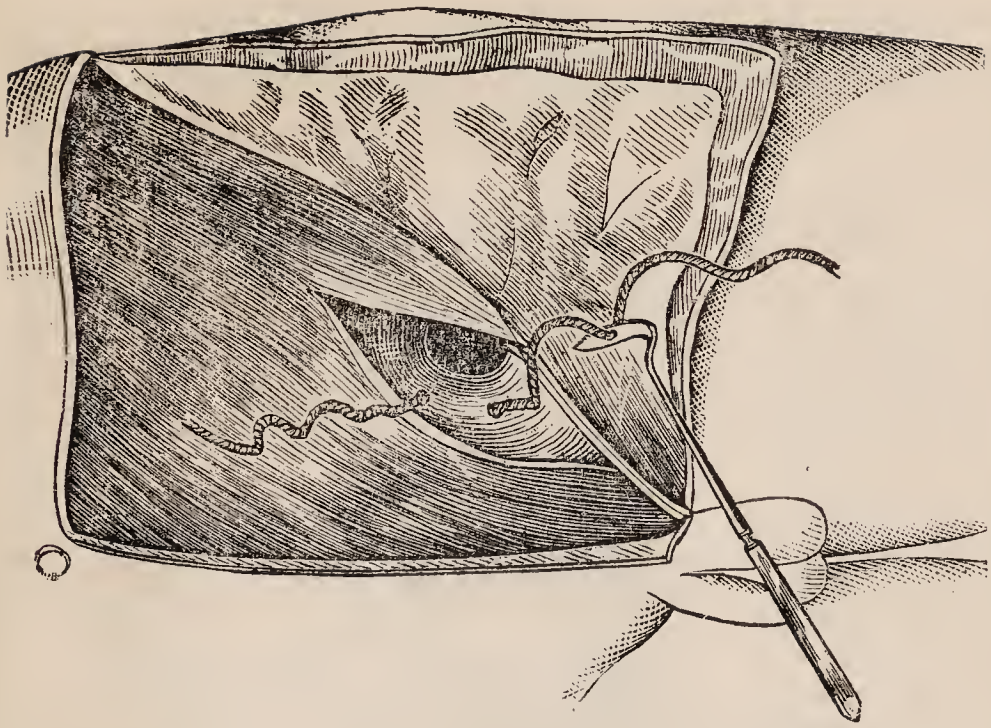


Fig. 8.—Loop on Abdominal Aspect of Conjoint Tendon.

within outwards, as high up as possible on the inner aspects of the canal. This double penetration of the conjoint tendon is accomplished by a single screw-like turn of the instrument (Fig. 7). One single thread is then withdrawn from the point of the needle by the index finger, and when this is accomplished, the needle, along with the other extremity of the thread, is removed. The conjoint tendon is therefore penetrated twice by this thread, and a loop left on its abdominal aspect (Fig. 8).

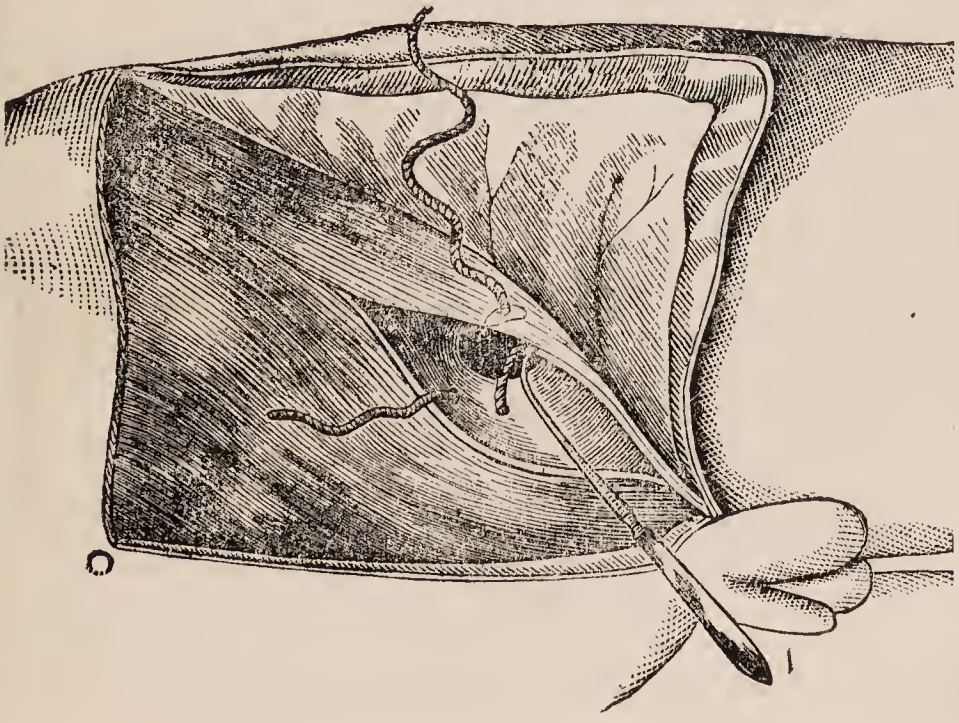


Fig. 9.—Thread from lower Border of Conjoint Tendon being carried through Outer Pillar of Internal Ring.

Secondly, the other hernia needle, threaded with that portion of the stitch which comes from the lower border of the conjoint tendon, guided by the index finger in the inguinal canal, is introduced from within outwards, through Poupart's ligament, which it penetrates at a point on a level with the lower stitch in the conjoint tendon (Fig. 9). The needle is then completely freed from the thread and withdrawn.

Thirdly, the needle is now threaded with that portion of the catgut which protrudes from the upper border of the conjoint tendon, and is introduced from within outwards through the transversalis and internal oblique muscles, and the aponeurosis of the external oblique at a level corresponding with that of the upper stitch in the conjoint tendon. It is then quite freed from the thread and withdrawn (Fig. 10).

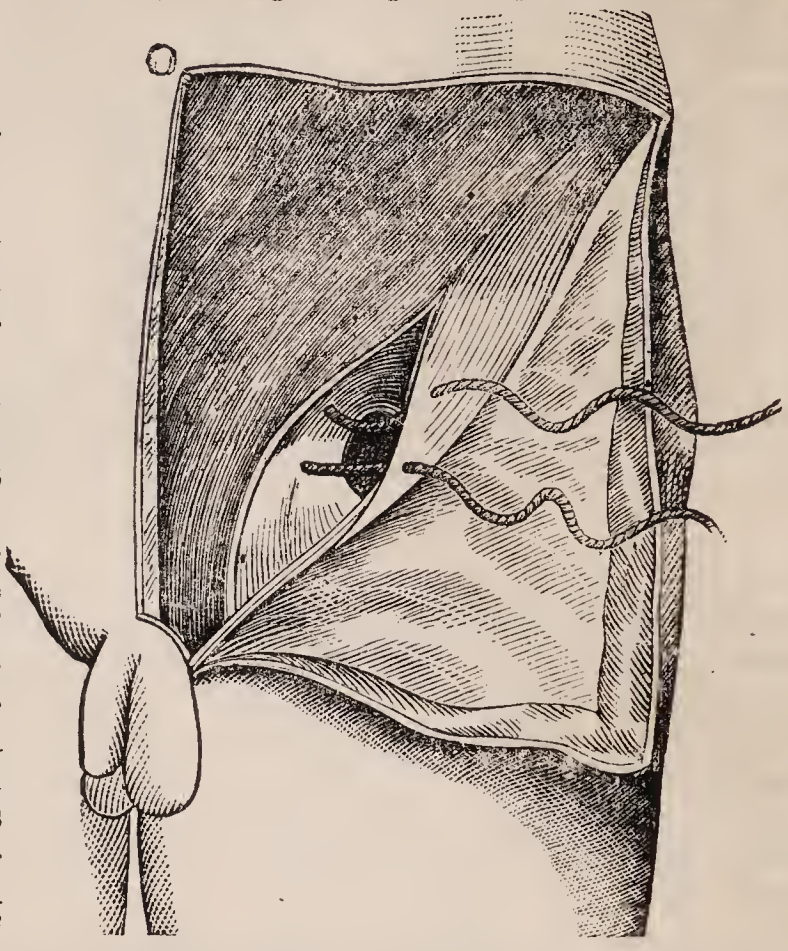


Fig. 10.—Thread ready for tying. In figures 3, 5, 7, 8, 9, and 10 the skin and cellular tissue is reflected in a flap, and the external oblique is opened up in such a way as to expose the interior of the canal and the internal ring.

There are now two free ends of the suture on the outer surface of the external oblique, and these are continuous with the loop on the abdominal aspect of the conjoint tendon. To complete the suture, the two free ends are drawn tightly together and tied in a reef knot. This unites firmly the internal ring.

In order to avoid compression of the cord, which might lead to serious embarrassment and sloughing or ultimate atrophy of the testicle, it ought to be examined before tightening each stitch. The cord ought to lie behind and below the sutures and be freely movable in the canal. It is advisable to introduce all the necessary sutures before tightening any of them. When this is done, they might all be experimentally drawn tight, and maintained so,

while the operator's finger is introduced into the canal to ascertain the result. If satisfactory, they are then tied, beginning with the one at the internal ring, and taking up in order any others which may have been introduced. In the great majority of cases the stitch in the internal ring is all that is required. (At the Dublin meeting the various steps of the operation were demonstrated on a figure representing the parts in indirect inguinal hernia.)

During the operation the skin is retracted from side to side, to bring the parts into view, and to enable the stitches to be fixed subcutaneously. When the retraction is relieved, the skin falls into its normal position, the wound being opposite the external ring. The operation is therefore partly subcutaneous.

When the canal has been brought together, a decalcified chicken-bone drainage tube is placed with its one extremity next the external ring, the other projecting just beyond the lower border of the external wound. A few chromic gut sutures are then introduced along the line of skin-incision.

Dressing the Wound.—Iodoform is dusted over the wound, the interstices of the scrotum, and its junction with the thigh. A sublimated wood-wool pad is applied, held in position by an aseptic bandage. As a rule, a portion of elastic webbing is placed over the margins of the pad to secure it firmly. As the patient is laid in bed, a pillow is placed under his knees, while his shoulders are slightly raised, so as to relax the tissues about the canal.

After-Treatment.—The rectal temperature is taken night and morning, and at the same time the dressings are inspected. The dressings are left undisturbed from fourteen to twenty-one days, unless they are previously stained or the temperature is abnormally high. On their removal at the end of that period, the wound is found healed, the extremity of the decalcified drainage tube which projected beyond the margin of the skin is seen to lie loose on the dressings along with the external portion of the majority of the superficial stitches. A fresh pad is applied to maintain pressure over the part. From four to six weeks after the operation the patient is allowed to rise from bed, but he is not permitted to work until the end of the eighth week. He is further advised not to lift heavy weights until the end of the third month at the very earliest. Adults engaged in laborious occupations are advised to wear a bandage and pad as a precautionary measure. Those who are not so engaged are not required to wear a belt except when of very lax habit. All are recommended not to overstrain themselves. In the majority of children (six to fourteen years) the closure is so complete and firm that further treatment by pad or belt is quite unnecessary.

In congenital inguinal hernia the sac is first isolated from the cord. As this structure is generally intimately connected with

the posterior surface of the sac, often by close organic adhesion, the sac should be divided longitudinally by two parallel incisions, one on each side of the cord, and the latter permitted to lie behind clear of the sac. The isolated sac should then be divided transversely about an inch above the testicle. The lower part is formed into a tunica vaginalis. The upper is pulled down as far as possible, and dealt with quite as the sac of an acquired hernia, additional precautions being necessary to clear the cord at the internal abdominal ring. It is freed of its connections, and placed as a pad on the abdominal aspect of the circumference of the internal ring. (Fig. 11.) On one occasion a separate tube was formed for the cord out of the sac, but this has not been repeated.

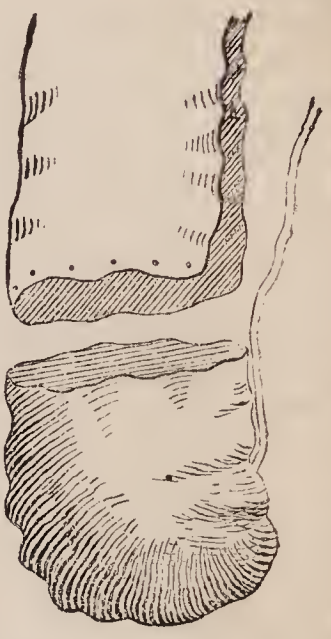


Fig. 11.—Manner of Treating the Sac in Congenital Inguinal Hernia.

In congenital inguinal hernia it has been advised that the testicle should be ablated. On two occasions this has been done—once when the testicle was injured by a blow received prior to admission, and once when that organ was affected by cystic degeneration. In both instances the absolute firmness and rigidity of the abdominal wall which resulted, taken along with the ease of the procedure, explains the desire for ablation of the testicle in congenital hernia evidenced by the advocates of this method.

Materials for Suture.—Any of the materials usually employed as sutures may be used in this operation, provided the thread is sufficiently stout to prevent it rapidly ulcerating its way through the tissues. All are not equally serviceable, however. The substances hitherto used may be divided into three groups: first, those introduced with the object of being withdrawn after they have served their temporary purpose; secondly, those inserted with the view of permanently maintaining in apposition the parts they have brought together, while they do not set up irritation in the tissues; and thirdly, those that are introduced to serve their purpose, and which are afterwards absorbed. The first may be represented by the stout copper wire silvered, used by Mr. Wood, of King's College, which admirably answers the purpose to which he applies it. As it has to be removed after a definite period, the suture must be so placed that a portion of it presents externally. Though in the operation brought forward in this paper it is possible to arrange the sutures so as to permit of their ultimate withdrawal, yet in describing the manner of securing them it will be seen that this is purposely avoided, all of them being fixed subcutaneously. The second method is that of inserting a metallic suture, which,

after being secured, is cut off short, the tissues being closed over it. Some employ this method merely to obviate the necessity of removing the wire, believing that it remains in the tissues and does not work its way out; while others consider that it not only has these advantages, but it also maintains by its presence the permanent apposition of the parts. That wire sutures, when properly applied, without leaving any sharp points projecting from the circle into which they are formed, may remain indefinitely in the tissues without producing irritation or working their way out, is an established fact. This is especially the case where they are inserted into bone with their extremities turned in. It is not, however, a constant occurrence even in bone, less so in soft tissues, and much less still in tissues habitually subjected to movement. This is consistent with my own observation, and it is admitted by many of those who practise and most strongly advocate the leaving of metal sutures *in situ*. Granting that the wire suture remains permanently in the tissues without producing irritation, does the mere fact of it doing so serve any purpose? Some believe that its function is ended when it has brought the pillars of the ring closely together, and has maintained them there for some fourteen or twenty-one days, after which it might as well be outside. Others, however, are of opinion that it maintains the pillars of the ring permanently in apposition. This is not the case. It serves a purpose in this respect while it exerts traction on the pillars. As long as it maintains tension on the tissues, the wire being itself unyielding, it causes ulceration of the parts pressed on. This ulcerative process will continue until the wire in relation to the tissues has reached a position of rest. When this is accomplished it is no longer an active agent, but descends to the condition of a foreign body which at best becomes encapsuled in the tissues, but occasionally gives rise to disturbance which ends in its elimination. On several occasions patients have been seen by the writer, in whom the gold wire which had been inserted by the surgeon who had performed an operation for radical cure of hernia upon them, was found lying in front of a fold of bowel which had subsequently protruded. In one of these, strangulation of the bowel had ensued. In it there was a considerable quantity of soft connective tissue round the wire, in the midst of which lay the strangulated gut. The third variety embraces substances which serve their purpose and which are afterwards absorbed. By far the most serviceable of such substances is catgut prepared so as to resist the action of the tissues from fourteen to twenty-one days. Gut of this description has been used for securing the pad of peritoneum and also for the closure of the canal. Gut prepared for a shorter period, and which will only resist the action of the tissues for a week, is used for the superficial wound. The use of these stitches along with decalcified chicken-bone drainage tubes obvi-

ates the necessity of subsequent interference with the wound. The latter admirably serve the purpose for which they were intended, securing drainage during the first six days, and then becoming entirely absorbed.

Results.—There have been forty-nine cases in which the writer has performed this operation for radical cure of inguinal hernia, and sixteen have been subjected to it subsequent to the relief of strangulation, in all sixty-five cases of inguinal hernia in which this method has been carried out. In sixteen others the principle of forming the sac into an internal abdominal pad was carried out in femoral hernia. Thirteen of these were submitted to the operation subsequent to the relief of strangulation, and three of them in ordinary course. In the former class of cases the operation of radical cure was not performed when there was any doubt about the vitality of the bowel, in a number of femoral herniæ it could not be performed, owing to the firm adhesions of the sac, especially when they were to the outer side next the femoral vein.

There have been no deaths from the operation. In one case the operation failed, the wound remained open, and though the patient recovered yet the hernia was not cured.

In a few cases suppuration ensued to a very slight extent, with the exception of a femoral hernia in which there was a prolonged dissection necessary. All the patients before leaving the ward were thoroughly inspected, and firm occlusion was obtained in each; so that the primary result was highly satisfactory. But it is just in cases of this kind that the permanent result so often differs from the primary, and as the former is the true test of the efficiency of the operation, the patients have been kept under observation as long as possible.

[That is to say, 16 have been under observation from 6 to 10 months; 12 for 1 year; 7 for 18 months; 11 for 2 years; 9 for 3 years; 2 for 4 years; and 1 for 5 years.]

All these when last examined were found to have the rings firm, with no impulse on coughing; out of the forty-eight cases in which this operation has been performed for radical cure, one only was found afterwards to wear an external pad, the parts, however, were firm.

Among the sixteen who had been subjected to radical cure after the relief of strangulated inguinal hernia, three subsequently wore a pad or bandage as a precautionary measure. One of these was of very lax habit, and was advised to continue the use of a support. One was a case of direct inguinal hernia with a very wide opening in the abdominal muscles, while the third did so as his occupation (engineer) often demanded considerable exertion. After the femoral herniæ no truss has been worn.—*British Medical Journal, Dec.* 10, 1887, *p.* 1263.

47.—TREATMENT OF THE SAC IN STRANGULATED HERNIA.

By John Poland, F.R.C.S., Demonstrator of Anatomy at Guy's Hospital, London.

From the experience of late years in dealing with the abdominal cavity, the importance that was formerly attached to leaving the sac alone no longer holds good; nay, as we shall see, it is even unadvisable; and this can be stated as true even in the most simple cases, where the intestine has been reduced after external division of the structure.

As to the modes of dealing with the sac we have the following:—(1) Leaving it alone without fastening it up in any way. (2) Union of margins of sac with catgut, and skin united over it. (3) Torsion of sac. (4) Ligature of neck with excision of sac. (5) Ligature of neck of sac without excision.

1.—*Leaving the sac alone*, whether it has been opened or not, is the course usually set forth in our systematic works on surgery. In Mr. Birkett's article on Hernia in the last edition of Holmes' System of Surgery, no mention is made of any other course. Sometimes the sac was plugged by the introduction of substances into it. The orifice of the hernial sac was often left to be plugged merely by a mass of omentum. This must in a very large number of cases have been but imperfectly accomplished. We now know from the experience of the ovariotomists how important it is that the peritoneal cavity should be carefully and effectually closed by bringing the peritoneal surfaces into close contact. Why the peritoneum should be treated in a different manner in hernia it is difficult to understand. This reasoning alone should be sufficient to condemn the old course of treatment in uncomplicated cases.

2.—*Union of the margins of the sac* by means of catgut sutures, the skin being united over this, is certainly a step in the right direction, by closing the peritoneal cavity and preventing extension of suppuration from the wound into its interior. It is far inferior in many respects to the methods to be described, but is applicable in certain cases—for instance, in old strangulated umbilical or other hernias where the sac is firmly adherent to the skin, in very large hernial sacs, and in cases where the intestines are closely adherent to the sac.

3.—*Torsion of the sac* was recommended in 1884 for the radical cure of hernia by Dr. C. B. Ball, of Dublin, at the meeting of the British Medical Association. He recommends the separation of the sac from the surrounding tissues; the sac to be then grasped with a clamp forceps high up and several half-turns given; a catgut ligature then to be applied tightly round the neck. The two special advantages which he claims for the operation are these:—(1) a higher and thus more perfect closure of the peritoneum than can be obtained by ligature; (2) the twisting has the

effect of tightening and throwing into ridges the peritoneum for a considerable area surrounding the abdominal opening. This he believes to be a matter of great importance, and, we must remember, as Lawrence pointed out many years ago, that one of the most fertile predisposing causes of hernia is an abnormal laxity and fulness of the peritoneum in the neighbourhood of the hernial opening. Dr. Ball has adopted torsion of the sac in only one case of strangulated hernia—a femoral. This method would be applicable in a few cases of long-standing hernia with wide orifices and where there is very great obesity; otherwise it does not appear to have any advantages in the cases we are considering over the method following.

4.—*Ligature of the neck of the sac, as high up as possible, with excision of the sac.* This was first advocated on the Continent by Czerny, and is now extensively practised both there and in this country, but more especially by the Liverpool surgeons. Directly the strangulated bowel has been reduced—after division of the stricture—the empty sac is separated by the fingers and forceps from the surrounding tissues and a stout catgut ligature applied to the neck as high up as possible. The sac is then cut away by scissors below the ligature and removed, and the wound closed in the usual way. This separation of the sac from the surrounding tissues is accomplished with the greatest ease in all cases of recent origin and in cases of femoral hernia. The cellular tissue being but little disturbed, there is often no suppuration, and the wound unites by primary union. The peritoneum is completely closed by the ligature, bringing the surfaces into contact, besides causing a good deal of drawing together of the loose folds in the neighbourhood. The site of the hernial orifice is thus sealed over in a few hours with lymph. In this manner no risk whatever is added to the operation. In other hernias of older date the separation cannot be effected without considerable difficulty, and might lead, if not carefully performed, to extensive sloughing and suppuration of the cellular tissue. This operation is therefore unadvisable for hernia of large size or for those of long standing. The writer has seen profuse suppuration of the wound take place after excision of one of these old sacs and also in some other cases, yet in none of them was there the slightest indication of septic peritonitis. The peritoneum is shut off from the wound in the space of a few hours, and this soon renders it impossible for suppuration however extensive to pass into the abdominal cavity. This closure of the neck of the sac has another great advantage; it effectually prevents all hemorrhage from the wound into the peritoneal cavity and its possible septic influence on this cavity. The more remote benefits from this mode of dealing with the sac are as follows:—(1) It holds out a great hope of permanent cure, not only in restoring the patient to a more normal condition, not only by removing a more

or less perfect track along which a portion of intestine might again descend, this track being in fact composed of morbid and useless tissues, but also in producing a radiating puckering of the peritoneum round the hernial orifice and closing the orifice itself by dense cicatricial tissue, and thereby tending to prevent yielding again at this spot. (2) We do away with an indurated thickened mass which often exists where the sac has been allowed to remain untouched, and hence the more perfect fitting of a truss subsequently and increased comfort to the patient. In cases where the opening is large the pillars of the ring may be brought together by sutures without adding to the risk of the operation. This mode of treatment, it is scarcely necessary to say, is prohibited in cases of gangrene, ulceration and extravasation of fæces, dense adhesion of intestines to sac, &c.

5.—*Ligature of sac without excision, or*, as recommended by Sir Wm. MacCormac, *with partial excision*,—that is, removal of a ringlike process of the serous membrane from the neck. This may be performed in large inguinal hernias and in the congenital form—the latter only in younger life. In adults the sac is too intimately connected with the cord to permit of even this partial removal. It is questionable whether this operation, more especially Sir Wm. MacCormac's method, is justifiable in these cases without the strict use of Lister's antiseptic precautions. As regards other cases besides these mentioned, ligature without excision has no advantages over ligature with excision.—*Practitioner, Nov. p.* 355.

48.—ON THE RADICAL CURE OF HERNIA.

By William Thornley Stoker, F.R.C.S.I., Prof. of Anatomy, Surgeon to the Richmond Hospital, Dublin.

[In the earlier part of this paper Mr. Stoker compares the more recent "open" or dissecting operations with that first described by Wood, and expresses his decided preference for the former. The permanent retention in the tissues of the wire sutures used for the approximation of the walls of the canal, is condemned on grounds mainly of a theoretical nature, sutures being regarded by the author as chiefly useful to excite such irritation as will cause abundant outpouring of lymph, and for the closure of the canal while the process of cicatricial consolidation is being perfected. We reproduce Mr. Stoker's description of his method of operating, and the several propositions with which his paper concludes.]

The plan of twisting the sac as a part of the open operation was first recommended by Dr. C. B. Ball, and I have found it so satisfactory that I have adopted it in all my later cases. I usually operate in the following manner. The sac is exposed by an incision extending downwards and inwards from the external abdominal ring as far as may be necessary. In ruptures in infants, one inch and a

half is generally a sufficient length; in adults or in youths with a large rupture, it may require to be two inches and a half or three inches long. The sac having been exposed, must be carefully and laboriously disconnected from the elements of the cord. This is often a very tedious process, and is best effected with the director and a pair of small scissors. In congenital and infantile herniæ, which constitute the bulk of those operated on in young subjects, the isolation of the sac is often particularly tedious. As soon as the sac is well separated as high as the external ring, and for an inch or so downwards from that point, it should be included in two catgut ligatures and divided between them. The lower ligature serves to close the tunica vaginalis if it is a part of the sac, as it generally is in congenital cases, while the upper one seals the peritoneal cavity. If the sac should be of great size, as much of the distal portion of it as is advisable may be removed. The proximal portion of the sac is then seized and twisted, the torsion being carried to such a degree that a sense of resistance is felt. It is difficult to lay down a rule as to the amount of force to be employed in twisting; the object of the operator should be to secure as complete closure of the sac, as close approximation of the walls of the canal, and as much tension and obliteration of the inguinal pouch is possible, without incurring the danger of the contorted sac sloughing from too severe treatment.

Two sutures of silk are then introduced. Each is made to pass through the pillars and walls of the canal, and to transfix the twisted sac between the inner and outer walls. The sutures should be brought through the skin about an inch from the incision on each side, and the ends of each tied "button" fashion over a leaden plate. Deep apposition is thus secured, and the twists are retained in the sac. Points of interrupted suture are then inserted in the skin, and the wound dressed antiseptically. In very young children a single deep suture may suffice.

I have found great advantage in dealing with the sac after this method; it forms a better, more easily treated, and more appropriate plug than invaginated tissue; it fills the canal completely, and, by virtue of its attachments to the walls, draws them together when twisted, instead of forcing them apart as invaginated tissue must. With a view to close the boundaries of the canal, I prefer not to separate the sac from the deep portion of the canal. The peritoneum in the bulk of cases is practically not opened, as the ligatures which surround the sac are applied before it is divided. The risk of peritonitis is, therefore, extremely small. The portion of peritoneum forming the sac is callous, and shows no dangerous objection to being twisted and pierced by the suture. That the peritoneum forming the inguinal pouch which corresponds to Hesselbach's triangle is involved in the general tension, and a wholesome flatness of the membrane in this situation produced,

seems to be clearly pointed to by a case mentioned to me by Mr. Ball, in which twisting on one side cured inguinal rupture on both sides. This was presumptively due to the tension which the twisting exercised, obliterating both the right and left inguinal pouches. I have had a similar experience myself in the third of the following cases, all of which afford good examples of the result of the treatment in instances none of which can be regarded as very favourable.

A question which has to be anxiously considered in the treatment of these cases after operation is whether we should afford artificial support to the part. I am thoroughly convinced that the application of even the slightest and most skilfully applied truss of the ordinary kind fitted with a pad is hurtful. Its pressure is sure to do harm; it produces progressive absorption of the lymph, the presence of which is the very essence of success, and its pad may even, by forcing its way into the parts, separate the newly joined structures. On the other hand, if the abdominal wall receives no support, any strain may slowly or suddenly reproduce the rupture.

It is then desirable to give such support to the parts during the period following operation as may protect them from any strain. This can be most safely and effectively done by an appliance which makes even pressure over the inguinal region, and is not fitted with a pad capable, by its wedge-like action, of helping to reproduce the rupture. Two methods appear to me as most excellent; one, the worsted truss, recommended by Mr. Lund, and only suited for children; the other, a form of support known in Dublin as Harrison's truss. Of this latter I can speak most highly, not only as an appliance useful in the after-treatment of operation cases at all ages, but as a means of dealing with rupture in young children with a view to its cure without operation. It consists of a well-fitting pelvic band and two short thigh pieces, like a very short pair of drawers made of linen, fitting tightly and applied by lacing. It is further retained in position by a perineal band, furnished with a scrotal bag, and by straps passing over the shoulders. I have used it with the most perfect satisfaction in cases where the child would bear no other form of truss, and have found it eminently successful.

I may briefly sum up my opinions on the subject under discussion in the following propositions.

1. That, particularly in young children, operation should only be undertaken when minor measures have failed or are inapplicable.
2. That on the ground of its safety, certainty, and precision, the operation by dissection is to be preferred.
3. That twisting the sac is a safe and efficient aid to the operation.
4. That sutures, so far as their use in closing the canal is concerned, serve but a temporary purpose, and that their chief end is to excite a sufficient lymph exudation.

5. That sutures, therefore, need not be introduced tightly, and that trouble from testicular swelling may be thus avoided.

6. That the permanent retention of wires is unnecessary, possibly hurtful, and bad in theory and practice.

7. That while a uniform support to the inguinal region is desirable for some time following operation, it cannot safely be afforded by a truss furnished with a pad.—*British Medical Journal, Dec.* 3, 1887, *p.* 1201.

49.—ON THE RADICAL CURE OF HERNIA BY THE METHOD OF DISSECTION.

By Kendal Franks, F.R.C.S.I., Surgeon to the Adelaide and the Throat and Ear Hospitals, Dublin.

[Mr. Franks has operated in twenty-four cases for the radical cure of hernia by the dissection method, and has been able to trace only four in which any return of the hernia has taken place. The author very properly does not regard cases in which a truss has to be worn after the operation as successful cases, neither does he recommend the wearing of any support as a preventive to return of the hernial protrusion. With strict antiseptics the operation is regarded as devoid of danger, when a proper selection of cases is made, and the procedure is undertaken in persons otherwise in perfect health, as distinguished from cases where strangulation of the intestine exists and surgical interference is called for to save life, and the radical method adopted only as a secondary measure.]

I need not now multiply cases in detail. The conclusions which my experience leads me to are that the operation is a safe one, and that it yields, in the majority of cases, a radical cure. Hence it is that I would recommend its extension beyond the limits which are generally laid down for it. It has been urged by some who have had large experience that the operation should be done in cases which cannot be controlled with a truss, or where the wearing of a truss is productive of distress. I would not draw the line here. I have been in the habit of recommending the operation, even when the rupture is a small one, if the owner of the hernia is a young man with the best part of his life before him. If the operation is a good one, it ought at least to be able to free a young man from the lifelong inconvenience of a truss. I am not now discussing the dangers which may arise from the presence of a hernia, especially if anything goes wrong with the truss. Mr. Dunnett Spanton has done well in pointing out and emphasising the dangers, but too little realised, of an uncured hernia. I am taking even a lower stand, and say that the inconvenience of wearing a truss, the certain amount of restraint in the enjoyment of athletic exercises, which is imposed on the young by a hernia, and the disqualifying effects in entering the services or in seeking for many

kinds of employment, enormously outweigh the short time necessary to be laid up by an operation, or the risk which such an operation may entail. On the other hand, when a man has passed the prime of life, and the inclination for more leisurely exercise than satisfies youth is creeping over him; if he be possessed of a hernia which he has learnt to control with a truss for years, and if the hernia be not a distinct source of discomfort, I would strongly advise such a man to leave it alone. In such cases exceptional circumstances alone warrant operation; in the young adult or in children, exceptional circumstances alone forbid it. Since I wrote the paper published in 1883 in the Medical Press and Circular, I have introduced certain modifications which I consider are distinct improvements. In order to make the description of the operation as clear as possible, I will take the steps of the procedure *seriatim*.

1. *The Skin Incision.*—I still hold that the incision through the skin should be on a higher level than, but parallel to, the inguinal canal. This can be easily effected by drawing down the skin with the fingers. When the operation is completed, the skin wound does not correspond with the situation of the wire sutures, and, moreover, is farther removed from sources of infection than if it be made closer to the groin.

2. *Treatment of the Sac.*—The rings having been well cleared, which is, I think, best done by means of a blunt instrument, the canal is examined. In some recent herniæ, especially of small size, the sac and its contents may have slipped back into the abdomen. In such cases I am satisfied to leave them there, and merely to close the rings and canal. Some of my best results have followed this method. If, however, the sac is an acquired one, and large and probably thickened and adherent, it may be treated in several ways. What I have most frequently done is to clear it from surrounding parts, then to open it and pass my finger through it till I can feel the margins of the internal ring. I then pass the silver wire first through one pillar of the ring, and through one side of the sac, then passing the needle through the other pillar of the ring, and through the other side of the sac, I thread it with the same wire, and withdraw it. When this suture is fastened, it not only closes the ring, but fixes the sac between its pillars in such a way as to obliterate its cavity. Two wires are generally used for this purpose. Below the sutures the sac is excised. On two occasions I have twisted the sac as recommended by Mr. Ball, and fixed it by passing the wire through it. This is a very good plan, but I cannot say that it yields better results than the method described above. When the cord is spread out over the sac, I do not think it is always good practice to dissect it off. The process is very tedious, and requires a great deal of care, but even so the cord is subjected to an amount of tearing and injury which it resents, and inflammation of the cord and epididymis is very frequently the

consequence. This especially applies to congenital hernia. In these cases I think the best plan is to divide the sac across, leaving sufficient below to form a tunica vaginalis; this can be turned down and sutured. The proximal portion I fix in the canal, in the way already described; it thus becomes obliterated, and helps to form a plug to fill up the canal.

3. *Closure of the Inguinal Rings and Canal.*—I think the method employed of closing the canal and rings is, perhaps, the most important part of the whole operation. In my earlier cases, as described in my former paper, I passed the sutures very much in the way which Mr. Woods employed in his operation. That is to say, while employing three sutures, each one was passed through a pillar of the internal and external rings, and then back again in the inverse order through the other pillars. By drawing these sutures tight, not only was each ring closed, and the length of the canal obliterated, but the internal ring was drawn up close to the external, so as to lie close behind it. This, I think, is radically wrong.

The plan I now adopt is this. I first close the upper part of the internal ring by passing the silver wire straight through the aponeurosis of the external oblique directly over the internal ring. The needle point is, of course, protected by a finger passed through the canal, and pressing the abdominal wall forwards at this place. The needle armed with the wire then picks up part of Poupart's ligament, and, having reached the finger, is carefully made to appear through the canal, when the wire is caught and the needle withdrawn. The unarmed needle now passes through the external oblique aponeurosis as before, and at a point corresponding to the other side of the ring, passes through this pillar, and being brought out through the canal, it is threaded with the wire and withdrawn. Before this suture is twisted, a second one is passed at the lower end of the ring in the same manner. As in the case of a hernia this ring is often much enlarged, this second suture corresponds generally to about the middle point of the canal. It also passes through the aponeurosis of the external oblique immediately in front of the lower part of the ring. The third suture, which is also generally silver, closes the external ring. This is, I believe, an immense improvement.

In the older method, suppose the wires were removed, the only obstruction to the descent of a hernia is the lymph which closes the two rings which lie almost directly over one another. In this new method, the pillars of the internal ring become glued to the aponeurosis of the external oblique lying directly in front of it. The canal is obliterated by being also glued to the aponeurosis; and, thirdly, the external ring is closed. Thus, supposing the wires closing the parts were removed, a hernia no longer can exert a direct pressure, but must force its way along a tortuous path, and I believe it would be easier for it to make a new opening for itself,

as I saw it do in one case which I have mentioned. Drawing the upper side of the internal ring down to Poupart's ligament I look upon as an additional safeguard. This method of obliterating the rings and canal I have used in all cases for the last three years, and I can speak of it with the greatest confidence.

I must here say a few words about the use of silver wire. Some surgeons object to the employment of silver sutures which are meant to be retained. Mr. Thornley Stoker calls it a fad of the day, and he raises many theoretical objections to its use. I may say to him, and to those who think with him, to use an expression of his own, "An ounce of experience is worth more than pounds of theory." I have used it in all my cases except one, and that was a femoral hernia. I have never seen it do the slightest harm. One gentleman has had it closing the rings for more than five years, and it never causes him the slightest inconvenience. My experience entirely corroborates what Mr. Mitchell Banks has said about it. I believe its retention materially fortifies the parts, and helps to protect against a recurrence. If the wound be kept aseptic, the wire will give no trouble, and will cause no delay in the healing process; but want of asepticism will give rise to irritation, and the wire must then be removed.

Lastly, in closing the wound, I always use buried sutures—that is, I endeavour to sew together with catgut the various layers of tissue which have been divided. The skin wound I bring together with an oblique suture, so as to leave a slight pucker at the upper angle for drainage. By so doing a drainage tube is seldom required, and the first dressing is allowed to remain undisturbed for ten days. I generally find a wound perfectly healed and the dressings caked and dry.

My list of cases show that the youngest case operated on was fifteen months, whilst the oldest was sixty-four. One was four, one six, and one seven years of age. Two cases did not exceed twenty, twelve from twenty to thirty, four between thirty and forty, and one was fifty.—*Brit. Med. Journal, Dec.* 3, 1887, *p.*1203.

50.—ON THE MANAGEMENT OF INGUINAL HERNIA.

By G. A. Wright, F.R.C.S., Assistant-Surgeon to the Manchester Royal Infirmary.

[After short reference to the preventible causes of hernia and the methods to be adopted for their removal, Mr. Wright says:]

We will suppose, then, that all removable causes have been investigated and set right. What is to be done next? Well, if the child is an infant, and the hernia has only been down a few times, and is not down when the surgeon is called in, my advice would be, leave it alone and wait, the rupture will very likely not come down again. I have had cases of hernia brought to me, in which

I have freed and retracted the prepuce, and the hernia, so far as I know, has never appeared again. Should, however, the rupture be of longer standing, or should it still descend in spite of the removal of exciting causes, some sort of support must be given. What is the best? First, I should say, do not trust to bandages or anything of that nature; they may answer, but they are not to be relied upon. A truss is the best thing if it is a good one. The ordinary wash-leather covered spring truss, if properly made with a flat, and not a sharply convex pad, and with a spring of proper strength (they are usually much too strong), is quite efficient, but it soon gets soaked with urine; the pad dries and becomes hard and irritating, the leather straps rot, and the spring rusts and gives. These, therefore, though cheap, are not to be recommended, when the dearer and better kind can be obtained. The two forms of truss I likebest for infants are the india-rubber belt with an inflatable rubber pad, and the rubber covered spring truss with a similar pad. If possible, duplicate trusses should be provided, so that if one gets out of order, the other may be at hand.

Next, should the truss be a single or a double one? Some surgeons recommend a double truss, with a pad so large that it covers in the whole hypogastric region, believing that the whole of this part is weak and needs support. This, I do not agree with. Others, as a routine, always order a double truss in every case of inguinal hernia, on the ground that if there is a tendency to rupture it probably exists on both sides. I think careful examination should be made, and if a dilated canal is found on the hitherto unruptured side, a double truss should be used; but if the walls of the passage are tight, only a single one should be applied. The proper size of truss, in accordance with the ordinary measurement round the pelvis, having been found, we should next see that the strength and curve of the spring, if a spring truss is used, are right. Any required alteration in these respects is readily made by moulding with the hands. The lie of the pad, so as to press upon the whole length of the canal, and its shape should be seen to. Next, if a perineal strap is worn, it will nearly always be found too long in trusses as they come from the makers, and should, of course, be shortened. All these matters having been attended to, the hernia is to be reduced finally (it is of course assumed first that it is a hernia and nothing else, and secondly that it is reducible), and the parts are to be well dusted with boracic acid powder (or "sanitary rose powder") and then the truss is put on. The sacrum and the hips should be carefully looked to, to see that there is no undue pressure, and the perineal strap must lie clear of the anus and not pinch or irritate the scrotum. Now for the instructions to the friends. "That truss must not be taken off under any pretext or for any purpose whatever night or day without the surgeon's orders, save and except only when the skin under it is made raw." (This

of course implies a bad fit or bad management.) These instructions will be received with incredulity or horror, according to the view of the parent or nurse. "I am to take it off of course when the child has its bath and when it goes to bed," is the usual remark, and this I may say is the result of long years of bad management on the part of the instrument makers, and of neglect on the part of surgeons. If, however, the surgeon makes it clear that the object of the truss is to cure the rupture, and so ultimately make the child like other and sound babies, the friends will soon understand. I generally put it in this way, supposing the child to be an infant of a month or two old, with a simple hernia. "If you keep up that rupture without its once coming down for three months" (or six months, according to age and circumstances), "it will almost certainly never come down again, and the child will be well, but you must remember that if it does once come down all the previous treatment is useless and goes for nothing." If the friends believe this there is a good prospect of a cure of the hernia in this way. The bath is perhaps the great objection in the minds of most mothers, but when they are shown that the child can be sponged over without disturbing the truss, and that the powder can be dusted beneath without taking it off, the difficulties are soon got over. The older the child and the larger the hernia, the longer is the time required for cure by truss wearing, and the less certainty is there of a cure being obtained; but in any case of an uncomplicated reducible hernia a fair trial should be given. In the majority of the cases that I have seen fail, the failure has been due to carelessness, or bad management of the child in one way or another. These are then the principal points in the matter of simple cases in children.

In adults (inguinal hernia is so rare in women that we may limit the subject to men for convenience), the same general lines should be adopted. The rings and canal should be carefully examined on each side to see their size and direction, and to get an idea as to the probability of a truss being efficient. The tone of the fibrous and muscular structures around the canal should also be noted; sometimes the parts are so lax that the pillars can hardly be made out at all; such cases are almost impossible to manage by trusses. Next, the presence of a stricture, of constipation, piles, an enlarged prostrate, or a chronic cough should be looked for; the existence of evidence of weakness elsewhere, such as an umbilical hernia, should be enquired into and remedied, and the nature of the patient's occupation, and the immediate cause of the first descent of the hernia ascertained. All this having been done, and the case not being considered one suitable for "radical cure," a truss should be selected. A great deal is made by some books, and many instrument makers, of the question, whether a hernia is a scrotal one or not, and instrument makers go so far as to say that every scrotal hernia requires a "peaked'

truss. A moment's thought will show that the mere question of whether the rupture comes down into the scrotum or not, provided it comes through the inguinal canal, is not of the smallest importance, and the only effect of a "peaked" truss, if it has any effect at all, is to cover up and conceal an imperfectly reduced hernia. If a truss is to do any good it must prevent the rupture from entering the canal at all, and a peak can have no manner of effect in this way. The question of whether a hernia is scrotal or not is, however, important in that, if it is scrotal, unless it is of the "congenital" variety, it is usually of long standing and of largish size; hence the canal is probably very large and the internal and external rings are approximated; the hernia is, therefore, more difficult to manage. I personally entirely refuse ever to allow a patient of mine to wear a "peaked" truss at all. As to the form of truss to be selected for ordinary purposes, a well made *flat*-padded common spring truss does fairly well; that it is not universally satisfactory is pretty clearly shown by the fact that, with very little trouble, I collected figures, or accounts, of twenty or more forms of trusses advertised in one place or another. Into this subject, however, I do not propose to enter far in the present paper, though I hope to have more to say about it at a future time. Having then examined the patient and not discovered any cause tending to the descent of a hernia, and decided that the case is suitable for instrumental treatment, the next point is to measure the pelvic girth and get a truss of the right size. Next, as to the kind of pad; this should be, as already pointed out, flat or only slightly convex. If the canal is much dilated and the rings very large, or if the hernia is direct, a largish pad sufficient to overlap well the limits of the canal is to be selected, and the lower extremity of the pad especially should be flat, and should reach well down and rest upon the pubes; then the strength of the spring should be ascertained: a too strong spring is not only painful, but I have known it, when worn for a long time, produce thinning by absorption of the abdominal wall around the ring, so as to sensibly weaken the parietes adjacent to the canal. Having fitted on the truss, and seen that it lies evenly in contact with the body all round, the patient is allowed to get up—a truss should always be fitted on with the patient lying down—and should test the efficiency of the instrument by stooping forwards, putting the hands upon the knees, and coughing. If the rupture, after three or four coughs, slips gradually down beneath the truss on its outer side, the instrument is, of course, not a safeguard, and should be rejected. This failure is generally due either to a weak spring, or more often to the fact that the pad is so convex at its centre, and so sloping at its lower part, that there is really little support given to the walls of the canal. Sometimes after wearing a truss for a few hours it is found that it has slipped upwards and outwards, altogether away from the

region of the canal; this is due to faulty measurement or shape, or to the absence of a perineal strap, and must, of course, be remedied. Occasionally one sees the most extraordinarily mischievous trusses worn—a large concave pad, with a sharp boss in the centre, meant to fit into and plug the inguinal rings—though this is more commonly seen applied for umbilical hernia, I have met with it used for inguinal rupture.

Trusses are rarely able to cure a hernia in an adult, unless the rupture is of recent origin and has only been down a few times; hence the rules for wearing the instrument are different in the case of adults. The truss must be put on in the morning while the patient is in bed and before he assumes the upright position. It is to be worn all day, and not taken off at night until the man is again lying down. The ordinary rules as to cleanliness and the dusting of the skin beneath the truss with powder should be carried out. Should the hernia descend at any time, it must be at once reduced and the truss adjusted. On enquiry of a case of strangulated hernia, it will generally be found that one or more of these rules has been transgressed, or that the patient has recently left off or broken his truss. As to a curative truss for adults, I must postpone the question for a future paper.

Certain conditions entirely preclude the use of an ordinary truss; these are—irreducibility of a hernia, the presence of an imperfectly descended testis, of a hydrocele, or of a sore over the rupture. The more ordinary causes of irreducibility are well known—strangulation, sudden descent of more bowel or omentum, thickening of omentum, matting together of coils of bowel, adhesion of bowel or omentum to sac or testis, and possibly, distension of bowel with flatus or fæces. Certain rare conditions that I have met with besides these are worth mention; such are: adhesion of the vermiform appendix to the testis in a case of cæcal hernia and enlargement of mesenteric glands by tuberculous deposit. Where a hydrocele, co-existing with a hernia, prevents the application of a truss, the hydrocele must be emptied before applying the instrument. In case of an imperfectly descended testis, if the gland can be drawn down sufficiently far to allow the truss to be applied between the testis and the canal, its effect will be to keep up the rupture and favour the descent of the testis; if the testicle is not perceptible at all, that is, has not entered the internal ring, and the patient is an adult, a truss should be applied to prevent descent of either bowel or gland; while if the case is that of a child, usually no truss should be worn, but time should be given for the testis to come down, and the same rule should be followed where the instrument cannot be fitted between the testicle and the rupture. Many of these cases are, however, best treated by operation, and the exact procedure to be followed must be decided in each case, often only after actual exposure of the parts at the time of operation.

Such are some of the many points that arise in the management of inguinal hernia without operation, and I shall conclude by again urgently calling attention to the need of careful supervision on the part of the surgeon, instead of simple transference of the patient to the instrument maker.—*Medical Chronicle, March*, 1888, *p.* 456.

51.—ON THE RESULTS OF THE OPERATION FOR THE RADICAL CURE OF HERNIA.

By W. Mitchell Banks, F.R.C.S., Surg. to the Royal Infirmary, and Professor of Anatomy, University College, Liverpool.

[We are unfortunately compelled to omit Mr. Banks's tables displaying the results in sixty-eight cases operated upon in the series of years commencing with 1880 and ending with 1887. Table I. records fifty-two cases of non-strangulated herniæ of moderate size. Table II. records sixteen cases of very large and enormous herniæ, not capable of support by trusses. A large proportion of the cases were operated upon from two to six years previous to the date of publication, so the results may be taken to indicate the final conditions of the patients in regard to radical cure or recurrence. Mr. Banks says:]

The operation which I have adopted is this. In inguinal hernia, the sac, after being cleanly dissected out, is opened, and all bowel is replaced and adherent omentum tied and cut away. The sac is then well pulled down, ligatured as high up in the canal as possible, and removed. Finally the pillars of the ring are brought together by two or three silver sutures, which are left in position. In femoral hernia the cleaning and removal of the sac constitute the whole operation, and no attempt is made to close the femoral aperture. In ventral and umbilical hernia use is frequently made of the whole or part of the sac as a kind of plug to stop the aperture, which is generally large, and in which it is seldom possible to adopt any means of approximating the edges which seems likely to be permanent. I have adhered to this method of procedure for two reasons, first, because, in order to judge of the value of any given operation, it must be done many times by the same man, who is then in a position to judge accurately of its good qualities and its defects; and, secondly, because the operation is the simplest that has been yet devised. This is a most important point, because any operation that can only be done by the inventor thereof, or by a few highly trained operators, can never in the nature of things become popular. Hernia is a universal disease, and any operation for its cure must be such as can be safely and easily done by any surgeon of average experience and ability. I make no pretence whatever to originality in this matter. In whole or in part the operation was done frequently before I did it. All that I have done has been to conduct a surgical experiment upon the plan just referred to.

The results of that experiment, so far as it has gone, are now laid before you in an analysis of 106 cases, 68 of which were cases of hernia without strangulation, while in 38 strangulation was present. It will be seen at once that, as regards the question of mortality, we must keep these two classes of cases quite distinct. As regards the effect of the operation from a curative point of view, however, we can draw the same conclusions from both. Again, I have divided the non-strangulated cases into two groups, the first in which the herniæ were of moderate size, and the second where the herniæ were very large or even enormous in size. It is most necessary to make such a distinction, because, in the first group, the operation is for the most part comparatively easy, while the accidents are only those that may happen in any surgical proceeding, even of a very simple nature. As a result the mortality is not great, and in future may be rendered very small indeed. But in the second group the herniæ were of great size, so large that no truss or other known means of support was of any avail. The patients were, therefore, completely unfitted for all the ordinary duties of life. A brief description of two or three instances may be given.

One patient was a labourer, who being quite unfitted for work, had become an inmate of a workhouse, where he lay, a burden to himself and others. Another was a wine merchant, who, by reason of his complaint, had been obliged to give up his occupation. In the house he could only go about in a dressing gown. He rarely ventured outside, and when he did he had to wear a large overcoat to conceal his deformity. A third was a glass-blower, reduced to perfect helplessness, and obliged to depend upon his wife for his means of support.

Now these great herniæ are most serious things to tackle. The operation is usually difficult and prolonged, and the dangers to be met and overcome are both numerous and various. It is not, therefore, to be wondered at that the concomitant risk to life is also serious; and my only reason for attempting such hazardous cases was that the patients were useless creatures, passing a wretched life, for an escape from which they were gladly willing to incur even the greatest risks.

With regard to the cases of strangulated herniæ, the operation for a radical cure has been added to that for the relief of mere strangulation. And this addition, so far from adding to the dangers of the ordinary operation, has, I venture to think, greatly lessened them. These thirty-eight cases are, of course, not the whole number operated upon during the past six years or so. There were many where the bowel was gangrenous, and could not be returned, or where the patient, being old and weak, and the herniæ large, I was afraid of adding to the pressing danger of an exhausted condition, that of a prolonged and tedious dissection of

the sac, which would have necessitated a long period of anæsthesia and exposure on the operating table.

With regard to the mortality in the non-strangulated hernias of moderate size, one death was clearly due to the operation pure and simple. The patient was a weakly child, with a large irreducible hernia. When I got to the bowel I found it was the cæcum, which had slipped bodily down into the scrotum. The operation for its reduction was difficult and tedious, and the child never recovered from the shock. I may here remark, in passing, that of all the forms of herniæ with which I am acquainted, those in which what may be called a landslip of cæcum takes place, present the greatest obstacles to return of the bowel, and involve the greatest risk to the patient.

The other fatal case occurred in a patient the victim of locomotor ataxy. Any operation might have precipitated a fatal result in such a man, and I have often thought that it was unwise to have attempted any operation at all upon such a subject. The post-mortem examination showed no traces of peritonitis. On the other hand it revealed an important point, namely, that the high ligature of the sac was so effectual, that hardly a dimple remained on the abdominal surface of the peritoneum to show where the hernial aperture had once been.

Turning to the cases of the very large non-strangulated herniæ, in this the mortality, I regret to say, was very great. In one instance the amount of bowel in the sac was so large that it could not by any means be reduced into the abdomen. It seemed as if the abdominal cavity had diminished in size, while the bowel in the sac had become greatly hypertrophied. After long and unavailing efforts to get the bowel into the abdomen, the operation had to be abandoned.

Of the thirty-eight cases of strangulated herniæ three proved fatal. Of these one was a man who was practically moribund from collapse, but in whom the stripping of the sac was so easy that no delay of moment was caused by it; he died a few hours after the operation. Another was an old bronchitic man of 77. With my better experience of to-day, I would content myself with simply opening the sac, replacing the bowel, and stitching up the hole in the sac. But a mortality of three in thirty-eight all round is certainly an improvement on the mortality of former days. No doubt this is in the main due to the use of surgical cleanliness, with which we were formerly unacquainted, and also to the fact that we operate earlier than we used to do; but something may fairly be given to the complete shutting off of the peritoneal cavity by the removal of the sac and ligature of its neck.

Leaving the question of mortality, if we now come to the actual utility of the operation, it will be seen that of the sixty-six cases which I have been enabled to follow up, forty-four were com-

pletely successful from a curative point of view. Of the seven which I have termed "partially successful," all the patients declared that they were benefited by the operation, that is to say, although there was a distinct tendency to return, still a truss could be comfortably worn, whereas it previously could not. Indeed, of those which I have put down as failures, not a few said they could do their work (with a truss) better than before the operation.

I would, in conclusion, desire to state as briefly as possible what are the general impressions regarding the whole question which have been left upon my mind. I would, therefore, say (1) that the prevalent notion that the wearing of a well-fitting and well-acting truss is a great burden is vastly exaggerated. After a time a man puts on his truss as he puts on his braces, and thinks very little about it provided it does its work properly. It is only when it is inefficient (and consequently uncomfortable) that he feels it a nuisance and a burden, and I have known men refuse to part with their trusses when there was every reasonable ground to think they might have safely done so, simply because they felt a certain sense of comfort and security in the wearing of them.

(2) With regard to children, I think that operative procedures are very seldom indeed required. Of my sixty-eight cases only some four or five were done upon children. I firmly believe that a well-fitting truss, worn for a sufficiently long period, will cure the vast majority of herniæ in children, and I have steadily set my face against doing operations upon them. There remain always a few cases when either there is adherent omentum or where the herniæ have attained such a size that it is impossible to control them. Such cases occur invariably among the children of the poor and ignorant, who are too stupid or too lazy to take the proper precautions. Such cases are naturally appropriate ones for an operation.

(3) I think we may always recommend, and even urge, the operation in cases of small femoral herniæ with adherent omentum. Patients with this condition are never safe from the sudden descent and strangulation of a small knuckle of gut, and the curative operation is about as safe as any in surgery.

(4) The same rule applies to cases of inguinal herniæ which are incapable of support on account of the presence of adherent omentum, or which, by reason of their mere size, cannot be kept up, and so render the lives of the patients at once useless and unhappy.

(5) I do not think that any person should be subjected to operation who can wear with comfort a truss which keeps his bowel securely in position. Not one of my sixty-eight cases was of this kind; and I have persistently refused to do operations upon such persons, even when sent to me specially for operation by my medical friends. In consequence of my refusal to operate they often went away much disappointed. Had I considered it right

to operate upon such persons I could easily have doubled the number of my cases. But if I had a rupture myself and found that a truss made me safe and comfortable, I would by no means be operated upon, and what one would refuse to undergo oneself one ought not to do to anybody else.

(6) I strongly recommend everybody to wear a light support, even after the operation, not believing at all that this destroys adhesions, as some people think. I found that in almost every instance of failure the patient, feeling confident in his cure, had omitted to wear a support; or else it got broken, and poverty and carelessness prevented the obtaining of another. Sometimes the cure had been apparently complete for many months—nay, even for a year or two—and then some violent exertion has spoilt everything. From this we may infer that it is impossible to attach any value to those records of cases where it is triumphantly announced that the patient left the hospital quite sound. They are simply futile and misleading. Patients must be watched for years before anything just and true can be said about them. Then you may observe that there can be no such thing as a radical cure, if a man ought still to wear a truss. I quite agree with you. I consider the name a misleading one; and the main reason is that a man who gets a rupture has naturally a weak and yielding canal or ring, and when you have patched him up you can only put him in the same position he was in before the rupture, because he will still be a man with a weak condition of his abdominal wall. But does not the operation close the inguinal ring? I say most distinctly No. All parings and scrapings and freshenings of the inguinal canal I hold to be utter nonsense, and quite theoretical. When an inguinal hernia is big enough to warrant operation, there is uncommonly little canal or ring left. I have generally found a big hole with a thin-edged margin, which has taken three or four fingers of an assistant to plug up while the sac was being removed. Then what is the use of pulling the pillars together by sutures? I do it simply with the object of holding the parts together temporarily while the wound heals, so as to prevent all danger from coughing or straining, because in very big operations I leave the wounds quite open.—*British Medical Journal, Dec.* 10, 1887, *p.* 1259.

52.—ON THE TREATMENT OF ABDOMINAL CONTUSION.

By B. Farquhar Curtis, M.D., Assistant-Surgeon to the New York Cancer Hospital.

[In the course of an exhaustive paper upon Contusion of the Abdomen, a resumé of which will be found in the *Synopsis* of this volume, Dr. Curtis states the general principles upon which such inquiries should be treated as follows.]

Since the establishment of the rule that in penetrating gunshot

wounds of the abdomen, immediate laparotomy is necessary, without waiting for symptoms of injury to the intestine, some have sought to extend the application of this principle to penetrating stab-wounds, and to all severe contusions of the belly. It is true that if rupture or severe contusion of the intestine has taken place, death is inevitable, unless laparotomy is performed at a very early period, just as this is true of gunshot wound of the bowel. But the intestine will almost certainly be wounded with penetrating gunshot wound of the belly, while in the severest forms of contusion, let the force be the most violent and the symptoms the most acute, there are, as we have already shown, many chances that the gut shall escape unhurt. Accordingly, the treatment of contusions of the abdomen must be wholly symptomatic—the surgeon having no right to assume that rupture of the intestine has taken place until symptoms appear which indicate its occurrence.

If it is apparent that hemorrhage is present, we should try to control it by pressure upon the abdomen, a firm pillow being bound upon it as tightly as can be endured, although one of the experiments on dogs showed that but little advantage is to be gained from any pressure which can be borne without anæsthesia. Morphine should also be given with care to quiet the circulation, and to relieve the intense pains in the belly and limbs, sometimes so excruciating that no amount of the drug consistent with safety can entirely prevent them, and stimulants must be withheld as far as possible. If the patient continue to sink, the surgeon should proceed at once to laparotomy, for many of these cases bleed to death from vessels which could be easily reached and ligated. To inject blood or salt solution into the veins of a patient while the blood is escaping elsewhere, is like pouring water into a vessel with a hole in the bottom, or as if one should treat a woman, dying of hemorrhage from placenta prævia, by transfusion without putting a tampon in the vagina.

After the vessels have been secured, stimulants and transfusion come into their proper place, and must be called upon at once to make up the loss of blood. Great collapse would contraindicate any operative interference, for laparotomy demands a certain amount of strength in the patient, and when the latter is very weak, it is already too late to save his life by operation.

If the case present no sign of hemorrhage, or if the hemorrhage soon cease, and there are no evident symptoms of rupture of the intestine, expectant treatment must be adopted; absolute rest in bed, very limited fluid diet, administered in small quantities, as little morphine as possible, in order not to obscure any symptoms about to develop, and continuous watching of the patient to detect the slightest change, for the only chance of success in these operations depends upon their performance at the earliest possible period, before septic poisoning and peritonitis can fully develop, and before

the strength of the patient has been exhausted by pain and vomiting. Every rude method of examination, such as rough pressure on the abdomen to detect points of tenderness, or attempts to elicit "succussion sounds," are to be carefully avoided. Ordinary diet, large quantities of water, emetics, purgatives, and even enemata are to be absolutely prohibited. It is important to give no more morphine than is necessary to make the patient's sufferings endurable, seeking rather to relieve pain by hot applications to the abdomen, if no hemorrhage is present. Morphine probably acts in peritonitis only by relieving pain, and diminishing peristalsis. If we had the power of instantaneously and completely paralyzing the peristaltic movements of the gut immediately after rupture of the intestine had taken place, doubtless the best treatment would be to stop them at once and not allow them to recommence until time had been given for the formation of permanent adhesions. But we have no such power, for it is improbable that morphine can produce its effect upon peristalsis in time to prevent fæcal extravasation, as the escape of fæces probably occurs in most cases within a few minutes of the accident. The benefits to be gained by immediate and energetic use of opium in these cases do not counterbalance the greatly increased risk for the patient caused by the concealment of symptoms upon the early recognition of which his safety depends if rupture of the intestine has taken place.

A typical case of rupture of the intestine would present shock, great abdominal pain and tenderness, severe vomiting, and perhaps a rise of temperature in the first few hours—the symptoms not improving with time. The physical signs, abdominal distention or retraction, loss of liver dulness, etc., might or might not be present. But the chief difference between these cases and those in which the intestine has escaped injury is the persistence of the symptoms, or their continued aggravation, and sufficient time must be allowed to elapse to determine this point—at least six hours. In a well-marked case with these symptoms, laparotomy is justifiable. If shock, pain, or tenderness be absent, the case is doubtful, and operation must be delayed until it becomes clearer. By far the largest number of cases will fall into this latter category. If there is a strong probability of rupture, an explorative operation is advisable; but the decision when operation is indicated, and how far it should be carried, must be left in each case to the judgment of the surgeon, as it is impossible to formulate rules for distinguishing cases which shade off into one another by such insensible gradations.

It is probable that the creation of an artificial anus will be the operation best suited to most cases of rupture of intestine in contusion of the abdomen. The collapse of the early stages, and the exhaustion later (when it has been impossible to make an early diagnosis) will in the great majority of cases prevent any attempt at such a prolonged operation as resection of the intestine with

suture, and the latter should be reserved for the most favourable cases. It will be easy to restore the continuity of the gut at some later time when the patient has recovered from the accident, and the dread of having a permanent fæcal fistula need not be allowed to weigh in the decision of the matter.

Undoubtedly in many cases of rupture of the intestine the patient will be too weak to permit of any operation, for it is certainly not justifiable to perform laparotomy when the patient is in collapse. This has already been done too often, as may be seen by the cases reported. Nothing is gained by such operations, and they bring discredit upon the surgeon and his art. If the patient is so feeble that it is impossible to bring about an improvement by the ordinary stimulants, he will certainly not survive laparotomy.—*International Med. Journal, Oct.* 1887, *p.* 343.

53.—SOME POINTS ON THE TECHNIQUE OF LAPAROTOMY FROM RUPTURED INTESTINE, ETC.

By B. Farquhar Curtis, M.D., New York.

The incision must be a long one, for we have to deal with the normal abdomen; not distended, and with atrophied tissues, as in cases of abdominal tumour. The length of the incision for the exploration should be at least four inches. The length for the complete operation, when all the intestine is to be drawn out for examination, and the examination cannot be complete without this, should be at least eight inches, unless the abdominal walls are unusually relaxed. The centre of the incision should, as a rule, be at the umbilicus; but if it is evident that the injury was inflicted very high up, it may be advisable to have it an inch or so higher, to facilitate examination of the stomach. The incision should not be made lower, for the attachment of the mesentery may interfere with turning out the intestine, especially if the mesentery is short, or thickened with fat.

The peritoneum should be inspected before it is incised. If there be blood in the cavity it will probably make its presence known through the transparent membrane, but care must be taken not to confound an ecchymosis of the omentum lying under the incision with free blood, and the distinction will not always be easy. It will be possible, also, to ascertain the presence of gas, pus, or even congestion of the peritoneum, in some cases. The peritoneum having been inspected and incised, a sponge on a long forceps is to be passed into the pelvis, and examined on withdrawal for blood, pus, or fæces. The same should be done for each lumbar region. It must be remembered that fæcal odour is not an absolute proof of the presence of fæces, for a fluid in the belly may contract this odour through mere contact with the intestine.

In performing laparotomy for internal hemorrhage, every step of

the operation should be executed with the greatest rapidity. As soon as the belly has been opened, and a large amount of blood is seen welling up from the bottom, the operator should lift up the omentum, quickly pass his left hand underneath it, upward and backward, and make pressure upon the abdominal aorta and the root of the mesentery, at the highest point which can be reached. The hemorrhage will thus be temporarily controlled. With his other hand, and the aid of his chief assistant, the entire small intestine is to be quickly turned out, the mesentery being inspected as this is done, and any bleeding points seen secured at once with clamps; another assistant wrapping the intestines, as soon as brought out, in towels which have been soaking in a hot 1 to 4000 bichloride solution. The abdominal cavity is to be rapidly emptied of blood and clots, and all bleeding points seized. The pressure upon the aorta may then be gradually relaxed, the operator watching to see if all the injured vessels have been properly secured.

But if the hemorrhage is not great, the operator should lift up the omentum, and carefully draw out the intestine, one loop at a time, wrapping the gut in towels as he lays it to one side, until the whole has been examined. It is impossible to make a thorough examination without removing the entire small intestine from the abdomen. Attention should first be given to those parts lying directly under the blow, for this is most frequently the situation of the injured loop. If any injuries are found, if they are extensive, and there is much fæcal extravasation from the wound, the injured loops should be wrapped by themselves in a cloth, and kept separate from the rest until the examination has been completed. But if the injuries are of small extent, and there seems to be no fæcal extravasation from the wounds, they should be closed at once according to the simple (and yet original) method employed by Bull in the suture of gunshot wounds of the intestine under similar conditions.

The injured loop is carefully laid upon a large flat sponge, and steadied there by an assistant who holds the mesentery and avoids all pressure upon the gut itself, while the operator carefully picks up the wall of the intestine with mouse-tooth forceps and inserts the Lembert sutures, tying each one as soon as inserted. The needle preferred by Dr. Bull is the delicate, curved intestinal needle of Schramm. Fæcal extravasation is avoided by the extremely careful handling of the gut, and the edges of the wound remain unsoiled, a great improvement on the ordinary method of removing the fæces from the neighbourhood of the wound by pressure upon the gut before the sutures are inserted, for it is almost impossible to do this without the escape of a small quantity, and the contamination of the edges of the wound.

In making an artificial anus in these cases, both ends of the gut are to be occluded with ligatures or clamps, and as it will not be

necessary to empty the gut at once, these may be left in place for twenty-four hours or longer, to allow adhesions to form and granulations to spring up, thus avoiding all danger of infection by escaping fæces.

The creation of an artificial anus will greatly shorten the durasion of laparotomy for rupture of the intestine, and should be used in every case in which the patient's strength is doubtful. The operation admits of still greater abbreviation, if the patient is in a desperate condition, by securing the ends of the gut with a clamp or ligature, thoroughly cleaning the peritoneal cavity, passing the deep sutures for the abdominal wound further back from the edge than usual, in order to evert more peritoneum and make a broader peritoneal surface, and trusting to the pressure of these sutures, together with the aid of the clamp or ligature to hold the ends of the gut in place until the adhesions are firm. The entire operation performed in this way ought not to last more than half an hour, and would not be too much to attempt unless evidently fatal collapse had set in.—*International Med. Journal, Oct.* 1887, *p.* 345.

54.—CASE OF ACUTE INTESTINAL OBSTRUCTION DUE TO THE PRESENCE OF A MECKEL'S DIVERTICULUM, SUCCESSFULLY TREATED BY LAPAROTOMY.

By A. F. McGill, F.R.C.S., Surgeon to Leeds General Infirmary.

On March 5th, 1887, I saw, in consultation with Dr. Glaister, of Rothwell, a collier, aged 30, who had been suffering from complete intestinal obstruction for nine days. We learnt that while at work on February 25th he was suddenly seized with severe abdominal pain; he walked home, and on taking a glass of water immediately vomited. From that time he passed neither fæcal matter nor flatus from the bowel, and vomited everything that he took by the mouth. The symptoms were not of the severest type, as he had long intervals in which he was free from pain and sickness; vomiting was, however, induced by every attempt to take food. His abdomen gradually increased in size, and his general condition much deteriorated. He was treated in the usual manner, chiefly by opium and large injections. When I saw him the abdomen was immensely distended, and numerous coils of intestines were distinctly visible. He was in a feeble and almost moribund condition, extremely wasted, and with a quick thready pulse. The case was apparently one of intestinal obstruction, situated in the small intestine, and due to some mechanical cause. We advised his removal to the Leeds Infirmary, where I operated the same evening.

The operation is described as follows in the Infirmary notes:—"The patient being placed under chloroform, the rectum was first examined, with a negative result. The skin of the abdomen having

been thoroughly cleansed, an incision was made in the median line, extending from a point one inch above the symphysis pubis upwards for three inches. The peritoneal cavity was opened, and a small amount of clear serum escaped. Through the opening the right hand of the operator was passed into the abdomen, and its cavity was thoroughly explored. As nothing to account for the obstruction was found, the incision was enlarged upwards for an inch or more. The intestines were then allowed to escape; when about three feet had escaped from the peritoneal cavity, the junction of the distended and empty intestine was seen. At this point a Meckel's diverticulum, much dilated and about six inches in length, was seen, passing downwards and forwards, to be attached to the fundus of the bladder. A loop of collapsed intestine passed under the diverticulum, the obstruction being caused by the twisting of the bowel at the point where the diverticulum was attached. The loop slipped from under the diverticulum with slight traction, and the distended portion could be seen emptying itself into the part previously empty. The intestines with much difficulty were returned into the abdominal cavity, and the wound closed with silk sutures."

The patient passed a small amount of flatus during the night, and was somewhat relieved the next morning. During the day he became worse, and the vomiting returned. As the passage of flatus had entirely ceased, and the abdomen was very large and distended, a saline purgative (Rochelle salt) was given. A large quantity of flatus was passed, and the patient's condition much improved. He went on perfectly well till the tenth day, when a small amount of fluid fæcal material escaped from the upper corner of the wound. This continued for a fortnight, when the discharge ceased, the wound rapidly healed, and he left the hospital perfectly well.

Several points in this case call for remark.

1. The attachment of the diverticulum to the fundus of the bladder has not, so far as I know, been hitherto described.

2. The obstruction was due to the twisting of the bowel at the point of attachment of the diverticulum, and not to compression of the gut under this band. In this case the diverticulum was a cause of volvulus, which in its turn was the cause of the obstruction.

3. The treatment by laparotomy does not now require to be defended, but the mode of operating is not as yet quite determined. According to Mr. Treves the method adopted in this case should be condemned. In his own words, "the practice of allowing the bowels to escape is absolutely bad." It is no doubt, when practicable, preferable to operate without permitting the bowels to escape, the shock of the operation being thus much diminished.

In a case under the care of my colleague, Dr. Churton, I operated in this manner. A middle-aged woman had suffered from acute

symptoms of intestinal obstruction for five days. Having opened the abdomen, I was fortunate enough to immediately find a firm fibrous band, which was the cause of the obstruction. This I divided with scissors, and straightway closed the abdomen. The patient had not a bad symptom, and left the hospital in a fortnight well.

But in many cases it is impossible thus easily to discover the cause of the obstruction, and then the surgeon should not hesitate to allow the intestines to leave the abdominal cavity. The danger of the operation is no doubt increased, but we are almost sure not to leave a remediable cause undiscovered. This happened to me about two years ago; I failed during operation to find a Meckel's diverticulum, which had caused obstruction for five days, and the patient, a boy of 15, consequently died. We may occasionally find the cause of obstruction by intra-abdominal examination, but in the majority of cases this method is ineffectual, and the intestines must be allowed to escape.

A second point connected with the operative treatment of this case is the leaving the diverticulum untouched. It might appear at first sight advisable to divide it and sew up the divided end. This would have taken some considerable time, and the prolonged operation might have caused a fatal result. It appears to me to be preferable to leave the diverticulum in position, even though this exposes the patient to the risk of another attack of obstruction.

4. No opium was given, but a saline purge was administered with apparent advantage. The administration of opium as a routine measure after abdominal operations is, in my opinion, much to be deprecated. It seldom does good to the patient, and it lulls the surgeon into a false feeling of security. Unless called for by severe pain, opiates should not be given. In this case the administration of a purgative, which immediately caused the expulsion of a large amount of flatus, did much good, and apparently turned the scale in favour of recovery.

5. This case well exemplifies the great difficulty with which the abdomen is closed in operations for conditions associated with excessive intestinal distension. Though every care was taken to prevent such an accident, it is evident that a small portion of the intestinal wall was caught in the upper angle of the wound. The fistula thus formed soon closed, and, beyond delay in healing, little harm was done. In another case we might not have been so fortunate. It has been suggested that in some of these cases it may be advisable to evacuate a portion of the intestinal contents through a small incision in the intestinal wall. The increased severity of the operation and the risk of septic infection of the peritoneum seem to contra-indicate this procedure. It should only be adopted when all other means of closing the abdomen have failed.—*British Medical Journal, Jan.* 14, 1888, *p.* 72.

55.—TWO CASES OF LAPARATOMY FOR PENETRATING GUN-SHOT WOUND OF THE ABDOMEN—RECOVERY IN ONE.

By Arthur E. J. Barker, F.R.C.S., Surgeon to University College Hospital, London.

The following cases are a contribution to the study of a class of injuries which, though they have received far greater attention abroad, and especially in America, than in this country, must doubtless have a keen interest for all surgeons.

Case 1.—A. T., aged 23, a French jeweller, was admitted into University College Hospital under my care on November 20th, 1887, at 3.30 a.m., having shot himself in the abdomen about half an hour previously. He was suffering from moderate shock, and though quite conscious when spoken to seemed dazed and frequently groaned. His pulse was 56, and markedly dicrotous (from subsequent observation this was probably its normal condition); it was of good volume. The skin was normal, and the temperature in the rectum 98·2° F. He had not vomited. He lay on his right side, with his knees drawn up; his breathing was slow and shallow, with an occasional catch. There was a small bullet wound, with blackened edges, over the border of the costal cartilages on the right side, one inch from the middle line, at the level of the tip of the ensiform cartilage. The pistol was a small "pin-fire" weapon carrying a conical ball 11 millimètres long, 7 millimètres in diameter, and weighing 60 grains. There was little or no external bleeding from the wound, and no evidence of fluid in the abdomen except a suspicion of dulness in the right flank, but there was much tenderness on pressure over the abdomen.

I first saw the patient at about 5 a.m., two hours or so after the injury, when he was beginning to recover from shock. Feeling confident from the situation of the bullet wound that the ball must have entered the abdomen and have struck the liver, and fearing that the slight dulness in the right flank was commencing effusion of blood, I had little hesitation in deciding on laparotomy in order to check hemorrhage, suture any lesions if present, and cleanse the abdominal cavity. Having, therefore, made every arrangement for complete antisepsis, the operation was done at about 6.30 a.m.

I first made an incision two inches and a half long over the tip of the ensiform cartilage, and on drawing its edges apart could see the opening in the peritoneum through which the ball had entered the cavity. Nearly under this, and at the attachment of the falciform ligament to the liver, was a patch of ecchymosis under the serous covering of the organ, which suggested the point at which the latter had been struck by the bullet. There was no corresponding breach of surface of the liver, either here or elsewhere, though I carefully examined most of the anterior surfaces

of the left lobe by pressing it down and throwing the light well between it and the ribs, and also by passing my hand over it. The surface of the organ was, however, stained with blood, and a dark clot was seen extending directly downwards in the middle line. This was about the size of the little finger when drawn out, and led me to think that it came from the track the ball had taken. I therefore prolonged the incision to the umbilicus, and found some more and larger solid clots lying underneath the abdominal wall and upon the colon and omentum.

The first point was now to see that the stomach was not injured, and a careful examination of its surfaces as it bulged up into the wound, as well as the fact that it was tense with gas, clearly indicated that it was not perforated. It was therefore pressed back into the abdomen, and the transverse colon lying just below it was hooked up and drawn out of the wound to the extent of about eighteen inches for careful inspection. This also was found intact, but the omentum along its lower border was noticed to be much blood-stained and covered with clots ranging from one the size of my thumb downwards, apparently derived from lesions of some of its own vessels. These clots were therefore carefully disentangled from the omentum, and the latter was wiped clean, and while this was being done the bullet was found in its folds, and a moment later a small round wad. From the position of the bullet it appeared quite clear that it had struck the liver at the insertion of the falciform ligament, and had glanced off it and passed between the abdominal wall and the stomach and transverse colon as nearly as possible in the middle line, to become entangled in the folds of the omentum, some of whose vessels were torn. It seemed highly improbable, therefore, that any other viscera were injured. Nevertheless, all the coils of small intestine exposed by the incision were carefully examined; then sponges wrung out of sublimate solution were thrust into both flanks and the recto-vesical pouch, but came out unstained. The viscera exposed were then thoroughly cleansed by sponging, and were adjusted with the omentum over them, after which the abdominal wound was closed in the usual manner. The bullet track in the abdominal wall was also scoured well, rubbed with iodoform, and a fine short drainage-tube was passed into it as far as the peritoneum, but not through the latter. Firm bandaging over a salicylic wool dressing completed the operation. The latter was well borne, and when the anæsthetic was recovered from there was no vomiting and only moderate pain, easily relieved by a little morphine. The patient was fed for some days with nutrient suppositories. The temperature rose the same night to 103·6°, the pulse to 100, and the patient became rather restless, but twenty-four hours after operation both were normal, and remained so practically to the end of the case. The dressings were changed on the sixth, tenth, and sixteenth

days, union having taken place by first intention, except in the bullet track, which, however, closed rapidly, the patient leaving hospital on the twenty-first day quite well. The bowels had acted normally several times.

Case 2.—M. F. G., aged 37, an American, was admitted on the following night, November 21st, at 8.30 p.m., having been shot in the abdomen about half-an-hour previously with a Colt's revolver carrying a conical bullet 15 millimètres long, 9 millimètres in diameter, and weighing 143 grains. I saw him a few minutes after 9 o'clock, and found him quite comfortable, with no trace of shock and not suffering in any way. The shot had been fired at close quarters, and the ball had struck the abdominal wall $3\frac{1}{4}$ inches internal to the right anterior superior iliac spine and half an inch below it, and had emerged 3 inches behind the same iliac spine and also half an inch below it. From neither opening was there any bleeding at this time, but the clothes were considerably stained with blood. From the position of the wounds it appeared probable that the ball had passed through the soft parts external to the peritoneum and without entering the abdomen. This was explained to the patient, and also the necessity of giving an anæsthetic so as to make a thorough exploration. His assent was at once obtained, on the understanding that he was to be allowed to come to as quickly as possible in order to see his friends, who had been sent for. On enlarging the anterior wound a slit was seen in the tendon of the external oblique muscle, and through this a probe slipped into the abdominal cavity, while a considerable quantity of blood welled up from the latter.

It was plain then that a full exploration of the abdomen should be made, but it was necessary to let the patient know his condition and see his friends before going further. He was therefore allowed to recover from the anæsthetic, when he at once gave his consent to any operative treatment which might be necessary, his friends too acquiescing readily. It was not, however, until 1.5 a.m. that the operation was begun, owing to some delay on the part of the police authorities in taking the patient's depositions. All arrangements for complete antisepsis having in the meantime been made, I commenced the exploration at that hour by a four-inch incision in the direction of the fibres of the external oblique, aud having the bullet wound in its centre. When the abdomen was thus opened blood mixed with clots, but without a trace of fæces or odour, escaped to the extent of three or four ounces. Knowing from a rather large experience of gunshot wounds the extraordinarily erratic course of conical bullets in some cases, my first care was to make out the track of the ball in this instance. The incision having passed through the aperture of entrance in the peritoneum, the aperture of exit had to be found if possible, and on sponging out the blood it was seen not

more than half an inch from the first, and just below the cæcum. At first it was thought that the latter viscus had been wounded, but this was not so. The bullet then had only just entered and left the abdominal cavity in the fold between the anterior wall and iliac fossa, a strip of peritoneum only half an inch broad separating the two wounds. It was a question then whether the intestine was wounded, but this was soon set at rest when the adjacent coils were drawn out, two wounds being found in one coil which exactly corresponded to those in the peritoneum, against which it had rested when the bullet was fired. These wounds were round, with slightly bruised edges, from which the mucous membrane did not protrude. They bled freely, but no fæces escaped from them, the bowel appearing to be quite collapsed on either side. Fearing that to simply suture these two wounds would seriously narrow the lumen of the bowel, I at once excised a wedge-shaped portion of the gut, including the injured part. The bowel was first thoroughly emptied by pressure, seized on either side in the fingers of an assistant, and two cuts were made with a scissors, reaching to the mesenteric attachment of the intestine. In this way a complete ring of the latter, about half an inch broad at the injured aspect, was removed, the mesentery being only slightly notched. The parts having been now thoroughly cleansed, the serous surfaces of the mesenteric notch were brought together by a continuous suture on both sides, and the cut edges of the bowel having by this means been apposed on their proximate aspect, they were united by a continuous suture of fine silk, taking up only the serous and muscular coats just at the edge, the needle coming out on the cut margin at each stitch. This suture was begun at the mesenteric aspect of the bowel, and went completely round the latter, care being taken that while it brought the edges into contact, it should not narrow the lumen of the bowel.

A second row of interrupted silk sutures was now introduced to reinforce the first. These took up the serous and muscular coats just beyond the first row, and when secured, the latter was completely hidden. There was no difficulty in controlling the contents of the bowel with the fingers, or in suturing the bowel without contamination of the stitches. All the coils of small intestine within reach were now drawn out of the abdominal wound, and were searched for further injury with a negative result. They were then washed with sublimate solution, 1 to 1,000, and before they were returned the abdominal cavity was thoroughly sponged out, special attention being given to the flanks and the recto-vesical pouch. When every thing appeared quite clean, the intestines were returned, and the wound was closed in the usual way with silk, a drainage-tube being left in the track of the ball, and reaching well into the abdomen. A salicylic wool dressing completed

the operation, which had lasted one hour twenty-nine minutes. The patient bore it very well, and did not suffer from shock. The next day he was fairly comfortable, only complaining of pain in the wound; but he was very thirsty, and ate a great deal of ice. Pulse 115, temperature 99° to 101°. He vomited occasionally, but only a little odourless, white fluid. He was kept well under the influence of morphine. There was no distension of the abdomen. His urine required to be drawn off every six hours; it was high coloured, and very acid. On the second day after operation he seemed very well, but could not retain anything taken by the mouth; he had been having peptonised suppositories every six hours. Pulse 120, temperature 101° to 102°. On the third day he seemed much better, but still vomited occasionally, though only the ice water and a little mucus. Pulse 120, temperature 101·2° to 101·8°. He was able to pass water himself, and also passed flatus. The wound was dressed for the first time under the spray, and the drainage-tube was shortened. On the fourth day he was still better, though the pulse remained at 120, and the temperature varied from 101·8° to 101°. But towards evening the fluid, which he still occasionally brought up in small quantity, began to have a fæculent odour, and to become yellow. The abdomen, too, was more tense than before, and the patient did not look so well. I therefore began to fear that there might be some obstruction of the bowel near the seat of operation, or possibly some collection of matter, though there was no dulness of the abdomen anywhere. In consultation with my colleagues it was determined to release the stitches in the wound, and explore it with the finger. This was done at midnight, but no collection was found, and the sutured part of the bowel was felt to be in a satisfactory condition. The next morning (fifth day) he seemed weaker, though not so sick; but his strength was improved by injection of stimulants in the afternoon. His temperature had risen somewhat to 101·6° to 102·6°, and the pulse was 130. During the night he became weaker, though less sick, and at 4·45 he died quietly (sixth day).

The post-mortem examination was made by Mr. Bilton Pollard, whose notes contain the following facts. The small intestines were very much distended, especially in the umbilical region; there was no gas, lymph, or pus anywhere in the abdominal cavity, but the coils of the bowel in the distended area were slightly greasy. The large intestine was not at all distended, and seemed out of the area of inflammation, which had affected the small intestine solely. The latter in the neighbourhood of the wound was more adherent than elsewhere. The portion of bowel sutured, which was in the ileum about three feet from the cæcum, was in a perfectly satisfactory condition. Union had taken place thoroughly between the cut ends, and the bowel was not obstructed in any way. Tested with considerable pressure it was perfectly air and water tight.

There were about two drachms of blood-stained fluid in the recto-vesical pouch, about half a drachm in the right flank, and three drachms in the left. There were a few spots of extravasated blood in the omentum, which occupied its normal position, but was adherent to the edge of the wound by recent lymph. There was much hypostatic pneumonia in both lungs, especially on the right side; the other organs were healthy.

It will be seen from these notes that the cause of death was a very moderate amount of peritonitis limited to the small intestine, and in addition no doubt the hypostatic pneumonia told unfavourably. Indeed, there was so little to be found in the abdomen indicating peritonitis, except the distended coils of bowel, that there was some hesitation in accepting this as the cause of death. But the absence of any other lesion except the pneumonia, left no alternative. A septic condition, in the ordinary use of the term, did not exist; the spleen was quite normal and other evidences also failed: in short, one turned away from this necropsy with an intensified feeling of disappointment, because the patient had so very nearly recovered.—*British Med. Journal, March* 17, *p.* 571.

56.—ON RODENT ULCER OF THE RECTUM.

By A. Trehern Norton, F.R.C.S., Surgeon to and Lecturer on Surgery at St. Mary's Hospital, London.

There is an ulcer of the rectum well known to surgeons, persistent and progressive, unyielding to treatment of any and every variety, and advancing after many years to more or less complete stricture of the rectum. It has been said by many to be syphilitic, though it is rare that a history of syphilis can be obtained, and appears to be much more common in women than in men, and generally after thirty years of age. The ulcer never commences outside the anus, nor at a distance from the anus, but immediately within. If, at the onset, the anus be turned out, we find inflammatory thickening of the mucous membrane, perhaps sharply excavated at the seat of the ulceration, and in some cases networked more or less resembling the stomach of the ox. The ulcer gradually extends, after a time completely surrounding the rectum. It is accompanied by pain and bleeding during defæcation, but the pain is not great, and the patient may have suffered from it for many months before seeking advice. As it extends up the rectum, contraction of the space takes place, and the signs and symptoms of stricture follow, chiefly constipation or difficulty in passing a motion, and flattening or shaping of the stool. In some cases small abscesses are formed, resulting in fistulæ. The treatment by gradual dilatation is very likely employed with apparently considerable relief for a time, and thus the case goes on over a period of many years. I have known several extending to fifteen years.

The chief points in diagnosing this form of disease from carcinoma are of course the length of time which the disease has existed and the absence of any considerable quantity of growth, although at the seat of the stricture the quantity of new tissue may appear not inconsiderable. In some of these cases I have cut away portions from the thickest part and sent them for examination to pathologists of repute, with the result that they have come to the conclusion that they were sections of carcinoma. The sections contain much inflammatory tissue, some formed fibrous tissue and scattered nests of the cylindrical epithelioma. Now were such an ulcer of some years standing to occur on the skin in a person of thirty-five years and upwards, it would doubtless be pronounced rodent ulcer, but it has never occurred to surgeons to look upon the same condition in the rectum as rodent ulcer, and without making any careful microscopical examination they have concluded that it must be syphilitic. Some twenty cases or so have come under my notice, and I have treated them as "stricture of the rectum," in three of them ultimately performing colotomy, but they have never died under my care, and it is only recently I have thought to cut away a piece for microscopical examination.

I have invariably entered minutely into the question of syphilis, but in not a single instance have I been able to detect any history of such, and on the contrary I have noticed that in cases of syphilitic ulceration affecting the rectum there has been this distinguishing difference, that the disease has attacked the tissues outside the rectum as well as within.

It may be as well to say a few words about the pathology of rodent ulcer. There is no very precise definition of rodent ulcer. It has been said that it is the least malignant form of cancer, but such is rather a statement of one of its characteristics than a definition. I have many specimens of it among my microscopical collections, and after careful observation of these specimens, compared with those of epithelioma, I should say that in rodent ulcers the columns are not so aggregated together, and do not bud to such an extent as in epithelioma—that they are widely separated by inflammatory tissue, and I am inclined to think that owing to the formation of fibrous tissue around isolated columns of epithelioma these columns are contracted and even destroyed and cast off as small sloughs, followed by contractions of the ulcer at parts and by apparent cicatrisation, and even real healing, hence the slow progress of the disease and its very prolonged continuance without affecting the constitution.

Treatment.—Among poor people when the ulcer has existed some few years it is probable that the patient has already been treated at more than one hospital, and, as in doubtful cases of cancer, syphilitic treatment has had a fair trial but without any success. It is clear that nothing but a destructive treatment can

be of service, we may therefore employ a solution of pernitrate of mercury or of chromic acid, or the ulcer may be scraped, or the question arises whether it is advisable to remove the whole surface by a very shallow excision; in order to overcome the stricture the usual methods of treatment are employed, namely, the bougie, sudden dilatation, and incision. I have used the mercurial solution with advantage in these cases, though I cannot say that I have cured the disease, and I have also used it with markedly good results in cases of epithelioma of the palate and pharynx, with unmistakeable relief and retardation of the growth. I think this method of treatment in epithelioma where it is difficult or dangerous to excise, has not been sufficiently practised by surgeons, and I see no reason indeed why, with cautious and continuous application of selected escharotics, the growth should not be destroyed almost as completely as by removal with the knife. I have scraped the ulcerated surface, but find it difficult by this means to remove all that I have desired. The cases in which I performed colotomy were treated by gradual dilatation for greatly constricted passage, and in all these the operation was resorted to because the passage of the bougie gave rise to an irregular rise of temperature, characteristic of septicæmia. Immediately after the operation the temperature subsided. Of these three cases one was soon lost sight of, the other two are still alive, one after a space of about five years, and the other two years. One continued her employment as a servant of all work for some years, the other, who is a married woman, has been incapacitated from work the whole time.—*Medical Press and Circular, Dec.* 14, 1887, *p.* 561.

ORGANS OF URINE AND GENERATION.

57.—ON THE DIAGNOSIS AND TREATMENT OF PAPILLOMA OF THE BLADDER.

By Sir Henry Thompson, F.R.C.S., Consulting Surgeon and Prof. of Clinical Surgery to University College Hospital.

Papilloma of the bladder is so called because its distinctive structure is that of an outgrowth from the mucous membrane in the form of papillæ, more or less covered with a well defined epithelium, spheroidal or more commonly cylindrical, each papilla being provided with a considerable blood-vessel. The structure, indeed, is normal in its elements, and the arrangement of these is normal also, inasmuch as the papilla is simply a very slender fold or extension of mucous membrane. A section of the mucous coat from an empty healthy bladder, made immediately after death, will furnish the same appearance in every respect. I show you here an admirable section taken from the monkey in the condition named, which, of course, is not attainable with a human subject.

It is not distinguishable from papilloma. To return; when these papillæ are long, slender, and filamentous, floating in the urine, springing together in a group from a circumscribed base or stalk, they are termed "fimbriated papilloma." If the organ containing such a growth is examined in air instead of under water, the fimbriæ collapse, adhere, and form a soft, rounded, scarlet mass, which is quite characteristic. Uniting the filaments, especially at the base, there are always some connective tissues interspersed, and mostly some non-striped muscular fibres also. Then sometimes the outgrowth springing from a pedicle expands so as to form a small polypoid mass, much firmer than the nasal variety just alluded to. It may grow to a large size, and whether small or large there may be two or more springing from the same base.

When there is a larger proportion of the fibrous structures named, associated to form the growth, and it is denser in structure than those first described, I have employed the term "fibrous papilloma" to denote it.

Fibrous papilloma thus understood is, of course, related through insensible gradations to the fimbriated variety, although the two are essentially distinct in their nature, since the fimbriated variety may continue increasing in size for years while still retaining its simple structure, and it does not necessarily acquire density with age. A characteristic fibrous papilloma is a growth chiefly solid, and as such may form a considerable mass, with only a small proportion of fimbriated papillæ on its surface. And here let me tell you that these fimbriated papillæ may be found attached to the surface of any vesical tumour, even to some forms of malignant growth, apparently as accidental adjuncts, the true character of the tumour being unaltered thereby. And this is a matter of importance in relation to diagnosis, and obviously indicates the necessity for caution in forecasting the result of operation, since a specimen of papilloma in the urine, while it proves the presence of that growth in the bladder, does not absolutely bar the possibility that a more serious growth may be there also.

Now the symptoms of vesical tumour present nothing special at the outset; a little undue frequency of micturition is then commonly the only sign, and excites no suspicion as to the real cause. But early in the progress of papilloma there is an important sign, characteristic of it throughout its entire course, and common to most other tumours at a late period, namely, the appearance of blood in the urine. A single hemorrhage occurs after exercise, thus resembling that from calculus, hence its presence is often suspected, but with certain differences which you may advantageously note. First, the hemorrhage from papilloma is generally much more abundant than that of calculus; and secondly, it is mostly unaccompanied by pain and irritation of the bladder. As the case advances, hemorrhage becomes more frequent; pain, however, is

still rarely complained of unless obstruction to the outflow of urine is occasioned by clots. Such a history should always arouse great suspicion. The symptoms described have very commonly, until recent time, been attributed to "congestion of the kidney," a rare, if not unknown occurrence, without the presence of other symptoms than those which have been named. And a careful inquiry should be made in order to determine the diagnosis. Endeavour first to learn whether the patient has ever observed that the act of micturition sometimes commences by passing urine natural in appearance, but becoming stained or mixed with florid blood towards the close. If so, the source is vesical, possibly prostatic, at all events not renal, but is more probably the result of tumour. When blood comes from the kidney, it is almost invariably mixed with the urine, and unless it is very recent indeed, it is brownish, not florid in tint. Occasionally, although very rarely, florid blood may appear first and clear urine afterwards, but the reverse is the almost invariable rule.

Secondly, a microscopic examination of *débris* passed in the urine must be diligently made, and before long the characteristic appearance of papillomatous structure will, if present, generally be discovered. The bladder may be washed out with plain water, especially after an examination by sounding, in order to obtain the evidence in question.

Why not sound the bladder, as we do for a stone, and determine the question thus? For this reason, that the question is not thus determinable. The soft, filmy tissues, even when springing from a thick base, cannot be felt floating in a fluid medium, and yield no evidence to the sound. Nor does rectal examination afford a sign unless the bladder is distended by the growth, when the organ feels rounded, but very soft, as if filled with fluid. On the other hand, when there is a cancerous growth involving the bladder to a notable extent, a well-defined mass of irregular outline and of hard, unyielding consistence, almost invariably presents itself to the finger in the bowel. Whenever this is met with, a condition so different from the rounded and yielding mass presented by senile enlargement of the prostate, there need be little doubt as to the very grave fact indicated, namely, the presence of scirrhus occupying the walls of the bladder itself, and therefore irremovable by art. If on this point you are in any doubt, you may with the short beaked sound obtain further evidence by examining the rectum with the finger at the same time, when carcinoma in any form may usually be thus detected. Having verified its presence, we make no attempt at removal; nothing can be gained by dealing thus with any portion of such a tumour.

Treatment.—Supposing that your investigation of a case of vesical hematuria results in the discovery of papillomatous *débris* in the urine, identified by you as such under the microscope: What

is to be done? I cannot advise you to pursue any system of local applications to the interior of the bladder by way of injecting or otherwise. The question of operation is the only one a surgeon can entertain. I assume that there is no sign of the presence of cancerous growth of any kind, because if there is I shall advise you on no account to touch it with the knife.

Thus for practical consideration, I may say that two distinct classes of cases are met with—the larger class consists of those patients in whose urine the *débris* of papillomatous growth are found, and which can be identified as such by the microscope. About these cases there is no doubt as to the presence of the growth, the only question is how are they best dealt with?

The second class consists of those cases in which the history and the symptoms, especially the nature and extent of the bleeding, render the presence of tumour highly probable. Nevertheless, after several examinations, no papillomatous or suspicious cell growth has been discovered. For these, with rare exceptions, digital exploration, through a small opening in the perineum, should be performed. This done, the operator ascertains if a growth be absent or present; and if the latter, whether it be a single polypoid growth, which may be easily removed by the forceps through the existing opening, or whether the extent and physical characters of the tumour indicate that a better chance of removal will be obtained by performing a supra-pubic operation. Or the inquiry may lead to the decision that the growth implicates the coats of the bladder chiefly, that it is not developed in the form of prominent masses admitting of removal, and therefore that no further operative procedure is desirable. I may add here that when the existing conditions have been determined by exploration, and the surgeon believes that his best course is to attempt removal above the pubes, there should be no delay, but he should at once proceed with that operation. The perineal incision does not in the least degree interfere with the subsequent line of action; the rectum is to be distended in the usual way, and the bladder will retain the necessary injection, which is the next step of the process, notwithstanding the opening which has just been made.

Should the management of the cases constituting the first class differ from that just sketched? I refer to the cases in which there is microscopic evidence that tumour is present. Is an exploratory incision necessary or desirable also for them?

In the majority of cases I think it is not. It is quite true that when there is only a small polypus with a narrow neck it can be easily removed by a simple perineal incision; and I am bound to state that my most successful cases have been thus treated, and have been permanently cured in that manner. But they would have been successfully treated also by the supra-pubic method, which, moreover, offers an additional advantage in the fact that,

especially when the patient if not stout, the operation affords an opportunity of removing other minor growths, if such exist, more easily and effectually than the perineal opening does. When I first began to remove vesical tumours the value of the new supra-pubic procedure, in regard of simplicity, safety, and efficiency, had not been established; but an enlarged experience of it, in my own hands, has convinced me that it offers advantages when the tumours are multiple or considerable, not to be obtained by the perineal route. I cannot recommend that it should be performed when you merely entertain a suspicion, however strong, that tumour is present in any given case. As long as the absolute proof arising from fragments passed in the urine is absent the perineal exploration is the only legitimate proceeding, unless it is deemed better to wait and make further research for indubitable evidence.

Next, as regards the performance of these operations, I have nothing to add to the details which I thought it right to enter upon very fully in my last lecture, when dealing with the exploratory operation, relative to the mode of removing any foreign bodies, or detaching any morbid products when found by its means.

Again, when the supra-pubic operation is to be undertaken for the treatment of vesical tumour, no different mode of performing it, from that required for the extraction of calculus, has to be adopted. Hence the operation is to be performed in the manner already described, in every particular as far as to the opening of the bladder itself. But at this point of the procedure I now give you some further instructions for completing it.

Imagine then, that there is a patient here before us whose bladder I have just opened above the pubes, and that my right index finger has entered the small opening I have just made with the scalpel. You might observe that the water which was injected into the bladder before commencing has been flowing out in a full stream, but that it is now checked by the finger *in situ*. My left hand is still holding the handle of the hook with which I firmly fixed the vesical coats before making the incision, is now in the act of being removed. Of course my finger is engaged in carefully surveying the form, the dimensions, the consistence of the tumour, and especially the nature of its attachment to the walls of the bladder, whether by a narrow or by a broad base. Then the whole of the inner surface of the cavity, usually smooth and polished, is traversed in the search for other growths only exceptionally present. And when the work to be done, and the space required for action have been thus determined, the opening, at present small, may be enlarged either by distending with the finger, or by cutting to the size required, and also, if necessary, for light to see. It is usual, often convenient, to pass a long loop of stout silk, one on each side of the upper margins of the opening of the bladder, through its coats, that an assistant may by drawing them apart display the

cavity, and at all events preserve the opening in its place. The operator then applies a pair of forceps of appropriate form, blunt or sharp according to the nature of the tissues to be removed, using the latter only whenever it is not possible to remove them with the blunt instruments. By careful management all the free growth is removed; and if a thick or hardened base is encountered it must be left; there can be no attempt to separate this from the coats of the bladder, with which indeed it is incorporated.

When the growth has a narrow, more or less pedunculated connection with the vesical walls, it is cut off pretty close to the adjacent surface. At last, when nothing remains to be dealt with, the fluid should be allowed to run out of the rectal bag, for the bleeding is usually rather free during the process of detaching the growth, and removal of pressure on the veins caused by the distended rectal bag materially checks it. There is no occasion to close the bladder, indeed it is better not to do so. Its muscular tissues soon contract and narrow the opening, which may moreover continue to give exit to a quantity of small tumour *débris* which remains, some of the bruised surface of the base remaining will slowly slough and separate. The wound is then treated precisely as after the supra-pubic operation for calculus, the directions for which were given in detail in the lecture on that subject.

I shall now briefly give you my view of the general results of my experience of removing vesical tumour to the present date.

I have operated altogether on thirty-eight patients, male and female. In at least five patients, excluding, of course, the recent cases, say the last twelve, since the lapse of a considerable period of time is necessary to determine the question of permanent results, the cure has been complete, no return has taken place, and the patients, with one exception of a man since killed by accident, are as well at this moment as they ever were, and are perfectly free from any urinary symptoms.

A large proportion obtained relief from severe symptoms for different periods varying between two and four years, and then reappearance of the growth has led to a second operation. In two cases, one that of a medical man who fully understood the pathology of his terrible disease, I have operated three times; in both of these at the desire of the patient from experience of relief and reprieve, attained by their preceding experience.

Four patients died within a few days of the operation, partly from exhaustion, two from cystitis and peritonitis, all among the very early cases, probably from too great an anxiety on my part to remove the whole of the growth, and the want of safer and more efficient instruments, which experience has led me now to employ. Two died from blood poisoning, each on the twelfth day after operation, one after the perineal incision, and the other after the removal of a large tumour by the supra-pubic route.

Several are living with threatening return; the great majority gaining relief from severe symptoms and some extension of life, varying considerably in different instances.—*British Medical Journal, Jan.* 7 *and* 14, 1888, *pp.* 1, 57.

58.—ON LITHOLAPAXY AND SUPRA-PUBIC LITHOTOMY IN MALE CHILDREN.

By W. J. Walsham, F.R.C.S., St. Bartholomew's Hospital, Lond.

[We reproduce here the main text of Mr. Walsham's important paper, omitting of necessity the tables and narratives of cases upon which his remarks are mainly based. Surgeon-Major Keegan's paper referred to by Mr. Walsham will be found in vol. xcv. of the *Retrospect*, p. 312.]

The object of this communication is to call attention to Bigelow's operation, as a method of removing small and moderate-sized stones from the bladder of male children, and to compare the cases thus treated with the recently published cases of supra-pubic lithotomy in children.

At the Clinical Society, in the spring of 1886, I read the notes of a successful case of litholapaxy in a boy of ten; and recently, in the Lancet, Surgeon-Major Keegan has recorded the result of his Indian experience in fifty-eight cases in young children and boys under puberty. I have now to add three more successful cases of my own, one in a boy of 11, a second in a boy of 6, and a third in a boy of 4; and I am permitted by my colleague, Mr. Willett, to refer to a fourth case (an infant 15 months old), on whom I helped him to operate. Further, Mr. Cadge informs me that he has twice successfully employed this method, at the Norwich Hospital, in boys aged 4 and 7 respectively. Another case, a boy aged 10, is briefly reported by Dr. Uhthoff, of Brighton, in the British Medical Journal for March of the present year; and only this morning (August 5th) I received a letter from my friend, Mr. John Morgan (of the Children's Hospital, Great Ormond Street), telling me that within the last ten days he has satisfactorily removed a stone by crushing from a boy aged 3. Probably other cases have been treated by litholapaxy in this country; but the above-mentioned nine cases are the only ones that have come under my notice.

On the other hand, I find that, since the meeting at Brighton last year, no fewer than twelve cases of supra-pubic lithotomy in boys have been published in the Lancet and British Medical Journal alone; and Sir William MacCormac has collected since January 1st, 1885, up to March of this year, thirty-three cases of supra-pubic lithotomy in children under 15, from the English journals and from the notes of the registrars and house-surgeons of the various London and provincial hospitals. In Sir Wm. Mac-

Cormac's thirty-three cases, except that all ultimately recovered, and that out of eighteen, in which primary union was tried for, in eight only did it occur, no details are given. But when the twelve cases of the high operation collected from the journals are compared with the cases of litholapaxy I here record, and with Dr. Keegan's brilliant collection of fifty-eight cases published in the Lancet, the result is very striking; and the comparison, to my mind, goes far to establish the superiority of litholapaxy over both supra-pubic and perineal lithotomy for the removal of small and moderate-sized stones from male children. Thus, of the twelve cases of supra-pubic lithotomy, although it is true that all, with the exception of one, recovered, and in this one death cannot absolutely be said to have been due to the operation, several seem to have run considerable risks; and, even in those which the wound united by the first intention, the rate of recovery cannot be compared with that after litholapaxy. Thus, in one there was cellulitis, and suppuration in the left iliac region, and it was forty-seven days before the wound had quite healed. In a second, there was extravasation of urine, necessitating incisions, and it was twenty-two days before the wound healed. In a third, the bladder became distended with blood; the wound opened on the sixth day; there was extravasation of urine in the inguinal region, and it was four weeks before the wound finally closed. In a fourth the temperature on the third day after the operation rose to 104°; the wound broke down, and did not finally heal till the twenty-sixth day. In a fifth, there was also a rigor, followed by high temperature and abdominal pain; urine passed through the wound for two weeks, and the patient was not discharged till the thirty-ninth day after the operation. In a sixth, the temperature also rose, and it is stated that it was months before cicatrisation was complete. In a seventh, the urine passed through the wound for a month, and the wound took on the appearance of a strumous ulcer, and did not finally heal for nearly ten weeks. Even in the most successful cases, where rapid union was obtained, in one it was twelve and in another it was fourteen days before the wound had cicatrised.

Now as regards the cases of litholapaxy: In the first case, the patient, a boy of 10, was kept in bed for a few days for precaution's sake; but he had no pain nor bad symptom of any kind from the moment of the operation, and would have got up, if he had been allowed, the day after it; he left the hospital within the week. In the second case the boy, aged 11, was, like the former, allowed to get up a day or two after the operation; he had no pain or trouble whatever, but was kept under observation for ten days before he was discharged from the hospital. In the third case, a child of 4, the crushing was performed with the greatest ease; he was allowed to get up and play about the ward the day

after the operation, and had no bad symptom. In my fourth case, a boy of 6, there was no bladder symptom from the time of the operation and he was discharged, well, on the second day. In Mr. Willett's case, an infant 15 months old, there was likewise practically no bad symptom, although the temperature rose for a day or two after the crushing, probably in consequence of some slight urethritis. Dr. Uhthoff's, Mr. Cadge's, and Mr. Morgan's cases were equally satisfactory, the boys being practically convalescent the moment the stone was removed from the bladder.

Of Surgeon-Major Keegan's fifty-eight cases, the stone in all but one was removed at a single sitting; and in all but this one the operation was successful. All the boys were under 14 years of age; forty-five were under 10; twenty-seven were under 6; and nine of them were under 3; the youngest was only 1 year and 9 months. The smallest stone weighed five grains, from a boy of 11; the largest seven hundred, from a boy of $9\frac{1}{2}$. The average stay in the hospital was seven days, though many of them were allowed to get up the day after the operation.

The chief points in favour of litholapaxy appear to be:—1. The absence of the risks attending all cutting operations. 2. The absence of all after-annoyance from the urine escaping through the supra-pubic wound, should primary union not occur. The rapidity of the cure, the patient being, in the great majority of cases, convalescent the day after the operation. 4. That it possesses, in common with the high operation, *versus* perineal lithotomy, the advantage that the genito-urinary organs remain intact, and the danger of emasculation in consequence of interfering with the ejaculatory ducts is avoided.

On the other hand, the objections that have been urged against lithotrity in male children are:—1. The undeveloped condition of the genito-urinary organs. 2. The small size of the bladder. 3. The narrowness of the urethra, and its extreme sensitiveness and liability to laceration.

1. As regards the undeveloped condition of the genito-urinary organs, the small size of the prostate is altogether in favour of the operation, since, as we all know, an enlargement of that organ is one of the chief difficulties attending lithotrity in old men.

2. The bladder is, no doubt, smaller in young children than in adults. But many lithotritists prefer to work with only two or three ounces of water in the bladder; and, in boys of only three or four years old, the bladder is quite roomy enough to permit of the efficient working of a small lithotrite, and such was found to be the case with the bladder of the infant of 15 months, operated on by my colleague, Mr. Willett. Further, a child's bladder is more expansile and commonly in a healthier condition than that of an adult, and, therefore, better able to bear any over-distension than the bladder of old men. But of over-distension there need be no

fear if a small-sized aspirator is used, or if care is taken to force in only a limited quantity of fluid if a full-sized aspirator is employed.

3. To pass to the third objection, namely, the narrowness of the urethra, and its extreme sensitiveness and liability to laceration, the urethra of boys is, of course, narrower than that of adults; but I am sure that in the great majority of cases the urethra, even in children of the age of 3 or 4, or even younger, is not so narrow as has generally been assumed. The meatus is, no doubt, often exceedingly small; but, when this is incised, I have found no difficulty, either in operating on the living or experimenting on the dead, in introducing a No. 6, or even 8, lithotrite or catheter (English scale)—an experience which entirely coincides with that of Dr. Keegan, that in children from 3 to 6 years of age the urethra will admit a No. 7 or 8 lithotrite, and that the urethra of a boy of 8 to 10 will admit a No. 10 or 11, or even sometimes a No. 14. Although, therefore, the meatus may be found very small, it does not follow that the urethra may not be large. Though I have not myself at present met with an instance, either in the living or in the dead, in which a No. 6 or 5 lithotrite could be passed after the meatus had been incised, Mr. Cadge tells me that he has met with one or two cases where he failed to pass the lithotrite through the deeper portions of the urethra. Such cases must, however, be rare, since Dr. Keegan, with his extensive experience, has not met with such. It has been affirmed, however, that the urethra in Hindoo children is exceptionally large—a statement, however, which is emphatically denied by Dr. Keegan, who, on the contrary, says that in Hindoos the urethra, as well as the external genitals, is particularly small.

Then, again, I believe the alleged extreme sensibility of the urethra in children to be over-rated; since, as far as I have observed, boys, when they have once got over the timidity of having an instrument passed, bear it quite as well, if not better, than do lads about puberty and adults. Indeed, I have had boys feel so little that they much preferred being sounded without chloroform.

As regards the actual performance of the operation, the same rules hold good as in adults; but the following points, I think, are worthy of special notice:

1. That the lithotrite should be fully fenestrated, and the female blade well bevelled, so that no detritus may be retained between the blades, and the risk of nipping the mucous membrance of the bladder may be avoided.

2. That the evacuating catheter should be furnished with an accurately fitting stylet, in order that any fragment fixed in the eye may be displaced before the catheter is withdrawn.

3. That the meatus should be incised, and no force used in passing either the lithotrite or the evacuating catheter.

4. That the stone should be very thoroughly crushed, as the

small size of the evacuating catheter will only allow the removal of small fragments.

5. That every particle of stone should be removed at one sitting.

6. That the first crushing should be as thorough as possible, so as not to necessitate the frequent passage of the lithotrite and evacuator.

7. That a small aspirator should be employed, to avoid any risk of over-distension or rupture of the bladder.

If the above precautions are taken, I believe that litholapaxy (provided always that, after the incision of the meatus, a No. 5 or 6 lithotrite passes readily into the bladder) will be found as simple and as safe an operation in children as it is in adults; and I venture to think that, for all small and moderate-sized stones, it will be the operation of the future in boys and children, as it is in adults; and that the supra-pubic operation will be reserved for the removal of large and hard stones only.—*Brit. Med. Journal Oct.* 15, *p.* 818.

59.—ON LITHOTOMY AND DRAINAGE IN SOME CASES OF VESICAL CALCULUS.

By Reginald Harrison, F.R.C.S., Surgeon to the Liverpool Royal Infirmary.

The state of the interior of the bladder relative to its shape, its power of contraction, and the presence or absence of inflammation, has a determining influence in the reproduction of stone, and we have, I think, been rather too much disposed to allow the physical properties of the stone to determine for us, as it were, the selection of the operation, irrespective of these relative conditions. Though a hard stone is, as a rule, best treated by lithotomy, this by no means implies that some small and soft ones are the less advantageously removed by a similar proceeding. Let me take, for instance, the case of a stone in the bladder occurring in an adult, with some chronic cystitis and enlargement of the prostate. The probabilities are that for many months, if we look at the section of such a stone after its removal, the bladder has been engaged in encasing it in a mould of phosphates just as completely as if it were done by plaster-of-Paris. I have examined a very large number of bladders with prostatic hypertrophy, and having regard to the pouched condition of the viscus as well as the condition of the mucous membrane relative to the presence or absence of phosphatic deposit upon it, it has often struck me, not that lithotrity has its failures, but that under these circumstances its successes are so numerous.

Reflections such as these induced me some years ago to gradually alter my mode of procedure in cases of this kind, where either it was clear that the stone was the effect rather than the cause of disease, or where this fact was demonstrated by the failure of litho-

trity. The bladder under these circumstances resembled a chronic abscess with a stone in it, and it is just as necessary to open and drain the one as the other. In a man of sixty, from whom large masses of phosphatic stone had been removed by three lithotrities, and who was never free from vesical irritation, I performed, two years after the first crushing, lateral lithotomy, and removed more phosphatic calculus of recent formation. His bladder was then drained and washed for eight weeks, until he voided normal acid urine, when the tube was removed, and the wound healed in a month. This and similar instances are examples, not merely of successful lithotomy, but of successful drainage.

In the performance of lithotomy in cases of this description, my aim is to make a wound into the bladder which will permit of ready and efficient drainage, and which is not likely to close up before the interior of the viscus is ready for the reception and continence of the urine; hence I am an advocate for lateral lithotomy, which best fulfils the conditions that are required. As a rule, cases of this kind require drainage to be continued from four to eight weeks, and I have drained them as long as ten weeks before the state of the bladder, as evidenced by the urine, was such as to allow the wound to heal up. The drainage tubes I employ, and some specimens of which I show, are larger than those which have been used temporarily by some surgeons after lithotomy, and some care is required in fitting them to each case. By their use I have been able to keep patients absolutely dry during the whole process of treatment, except perhaps the first few days. At the same time antiseptic dressings have been applied to the perineum; but I do not attach much importance to the latter so long as the urine drainage is perfect. From a gentleman of seventy, who for four years had passed his urine by catheter, I removed by lateral lithotomy three uric acid calculi of moderate size coated with phosphates. I made a very free opening into the neck of the bladder, put in one of my largest-sized tubes, and drained continuously for eight weeks, when the wound was allowed to heal. He can now expel his urine without assistance, and has entirely discarded the catheter. It is remarkable that the bladder should have entirely recovered its power after so long a period of inaction as four years.

Putting aside what may be due to the accidents of lithotomy, to which we are all more or less liable, and which are really responsible for no inconsiderable amount of the mortality following this operation, the results will be largely determined by the attending circumstances of the individual case. Leaving out of consideration cases such as those with dilated ureters and purulent kidneys, which are as much outside the question at issue as they are beyond repair, and taking instances where the only objection against lithotrity is that the stones are likely to return, or have been proved to do so, I have not observed that the perils of lithotomy are very great.

On analysing my experience of lithotomy, I can refer to fifteen cases where the process of opening the bladder was followed by a more or less prolonged system of drainage and irrigation. Of this number three terminated fatally in the course of from three to five weeks from far-advanced suppurative disease of the kidneys. I had no desire to operate on them at all, but the patients were in such a painful condition that I had no alternative but to do as they wished. They illustrate the disastrous consequences that may ensue when stone and cystitis are complicated with obstruction or anything that interferes with the process of natural urine drainage prior to the removal of the stone. In two of these cases there was some enlargement of the prostate, whilst the third was complicated with an old urethral stricture. Further, they clearly point to the importance of drainage as a necessary part of the process connected with the removal of some stones. The remaining twelve persons recovered and continue well, three of them having previously been treated by crushing.

In determining how long it is necessary to continue the drainage, I attach considerable importance to two points—first, to the condition of the urine; and, secondly, to certain muscular actions of the bladder, which become more apparent in those cases where atony pre-existed. So long as a patient goes on discharging ammoniacal or very purulent urine, so long must the drainage be continued. When the urine is becoming normal, one of the earliest indications that the drainage tube may be withdrawn is the voluntary or spasmodic expulsion of urine along the natural passage. After three or four weeks' drainage I have allowed patients to get up for a little while, and sit in a chair with a clip at the end of the drainage tube. When urine is expelled independently of the tube along the natural passage, it is a sure indication that the power of the bladder will be restored in those instances where it had been lost to a greater or lesser degree. In a man, aged sixty-eight, with an atonied bladder and retention of urine, in whom catheterisation was difficult, I performed perineal cystotomy, divided the prostate, and put in a drainage tube. This was worn for eight weeks, when it was noticed that a certain quantity of urine forced its way along the urethra. The tube was withdrawn, the wound closed, and after that the patient had no difficulty in urinating, though the power of the bladder had been entirely suspended for some months prior to the operation and drainage. In two instances where the stones were very large I had to divide both sides of the prostate, and these cases made very rapid progress. The wound should invariably be made clean and straight, and the relations of the parts should not be unnecessarily disturbed with the finger, as thus pouches are made in which urine may lodge. In one case recovery was somewhat retarded by two or three attacks of secondary hemorrhage, which, however, was not sufficient to be of much importance. In another,

the patient had two or three slight attacks of orchitis, due probably to some imperfection in the drainage apparatus; where the prostate is very irregular this may happen unless care is taken in making the incision into the neck of the bladder.—*Lettsomian Lectures, Lancet, Feb.* 4, 1888, *p.* 210.

60.—ON HYPERTROPHY OF THE PROSTATE AND ITS RELIEF BY OPERATION.

By A. F. McGill, F.R.C.S., Surgeon to Leeds General Infirmary.

It is well known that about 30 per cent. of all men above fifty-five years of age are suffering from enlargement of the prostate, but nothing like 30 per cent. of men of this age ever apply to a surgeon for assistance. It is true that many suffer more or less from symptoms which the surgeon would know pointed to prostatic hypertrophy, but these symptoms are not sufficiently severe to prompt the sufferer from them to seek for surgical relief. We must, then, look for some reason which will explain the difference between the two classes of cases, both suffering from prostatic hypertrophy, the one with and the other without symptoms. That this difference does not depend on mere size is a certain fact. I lately had under my care an old gentleman to whom I was called while he was suffering from retention of urine. I examined his prostate through the rectum, and found that it was immensely enlarged; the prostatic hypertrophy must obviously have existed for years, but I learned that he had only once before required surgical assistance, and that he had lived in a comfortable condition, with no well-marked urinary symptoms. This is only one case, but the same fact has been often observed, and I have no doubt that many of you can call to mind cases of a like character. On the other hand, we not unfrequently see patients suffering from prostatic retention in whom it is impossible to make out, by rectal examination, that the prostate is enlarged. Every symptom is present and we have no doubt of our diagnosis, and yet it is evident that there is no great hypertrophy of the gland. We may therefore conclude that symptoms are induced by enlargement of some particular part of the organ, and not by general prostatic hypertrophy.

There are three forms of enlarged prostate with which I am familiar which give rise to characteristic symptoms. These three forms have one common characteristic—they are all growths which protrude into the bladder cavity, and may consequently be described as vesical and not as perineal outgrowths. This, as we shall presently see, is a matter of great importance, as it teaches us that if we wish to perform any radical operation we must attack the prostate from within the bladder, and not from the outside by a perineal incision. The varieties are as follows:—1. A "uniform

circular projection surrounding the internal orifice of the urethra." The enlargement thus described by Sir Benjamin Brodie does not seem to have been generally recognised. It is, however, frequently found when the prostate is examined through a supra-pubic wound in the bladder. A hard mass of variable size is felt surrounding the urethra like a collar, and projecting for a variable distance into the cavity of the bladder; about its centre the orifice of the urethra can be felt. This I believe to be far the commonest of the three forms of vesical prostate. It has been seen in four out of five cases examined in the Leeds Infirmary during the last few months. It is not described in many modern works on the subject, probably because descriptions have been taken more from museum specimens than from examinations of the parts *in situ*. After the bladder has been removed from the body the prostate loses the support of its capsule and other fibrous tissues, and consequently the projection into the bladder cavity is to a great extent lost. 2. A sessile enlargement of the middle lobe, situated partly in the posterior half of the prostatic urethra and partly in the position of the uvula vesicæ. It is usually small in size. 3. A pedunculated enlargement of the middle lobe. The outgrowth springs from the prostate immediately behind the urethral orifice. It varies much in size, and the peduncle by which it is attached varies also. Indeed, no distinct line can be drawn between this variety and the preceding one, as the two forms gradually merge into one another.

These, then, being the chief varieties met with in patients suffering from symptoms of enlarged prostate, we will next discuss the mechanism by which the symptoms are induced. This inquiry will on the present occasion be confined to cases of the first class, in which a prostatic collar surrounds the internal urethral orifice. In enlargement of the middle lobe, it is obvious that the sessile variety acts mechanically by blocking up the posterior half of the prostatic urethra as well as the urethral orifice, while the pedunculated variety forms a valve which will be washed forwards by the stream of urine at every attempt to micturate, and by blocking up the opening prevent to a greater or less extent the passage of urine into the urethral canal. Taking, then, the case of a patient with a uniform circular growth projecting into the bladder and surrounding the urethra on all sides, we will consider what takes place when he attempts to expel urine. The bladder wall contracts, and its fluid contents are forced on to the outer surface of the projecting collar. The urethral orifice is thus closed, and no urine escapes. The more forcibly the bladder contracts, the less the likelihood of voiding urine. The collar acts as a circular valve, and the greater the pressure on its outer surface the more tightly is the canal passing through it closed. The action of the valve may be roughly compared to that of the mitral valve, which is firmly closed by the contraction of the ventricle forcing the blood back

on to its outer surface. The patient, finding that he is unable to relieve himself, soon ceases his violent efforts, the pressure on the valve is immediately lessened, the urethra is able to open, and urine flows away in a feeble stream. If he attempt to expel it more quickly the outflow suddenly stops, and it is only after micturating two or three times that he obtains sufficient relief; even then, a certain amount of residual urine—a fertile source of danger—remains behind. The presence of residual urine and the consequent frequency of micturition may be explained by the fact that more violent contraction of the bladder wall is required to completely than to partially empty the bladder, and the more violent contraction compresses the valve and thus closes the urethra. This is, perhaps, a more plausible hypothesis than that usually advanced. It is stated that a pouch forms below the level of the urethra, which is elevated by the enlarged prostate. This is partially true, but it seems difficult to imagine that a pouch capable of containing six, ten, or twenty ounces can be formed in this manner.

If we trace the further progress of a case which is left to nature, and is not interfered with, we shall usually find that the condition of the patient slowly but steadily deteriorates. Micturition becomes more frequent, and the residual urine increases in quantity. The wall of the bladder, being called on for extra work, becomes thickened, and its muscular fibres hypertrophied, but this increases instead of diminishing the difficulties attending the act of micturition. At the time some slight cause inducing cystitis and causing tumefaction of the urethral orifice may give rise to an acute attack of retention. In any case, as time progresses the wall of the bladder undergoes a further change; the muscular fibres become separated from one another, and gradually waste; they lose to a great extent their power of contracting, and the condition known as atony supervenes. This condition is marked by a characteristic symptom—the involuntary passage of urine, or, as it is better termed, overflow. This symptom at first only occurs during the time that the patient is asleep; during the day it is prevented by constant watchfulness, but as the atony increases the expulsive power is almost lost, and a constant dribbling is the result. The atrophied wall of the bladder, when distended, cannot contract firmly enough to close the prostatic valve, and as urine accumulates the hydrostatic pressure increases, and it flows away through the patent urethra. These, then, are the mechanical changes which result from obstruction at the bladder neck—changes which may be explained by the presence of the valvular prostate which exists in a large proportion of the patients in whom these symptoms supervene.

[Having briefly discussed the changes which are induced in the bladder and kidneys by inflammatory action in these cases, and the usual treatment of prostatic hypertrophy, the lecturer proceeded as follows:]

We have thus seen that the orthodox treatment of enlarged prostate may be described in a few words, Teach the patient how to pass a soft catheter for himself, and let him pass it once or twice daily. When this treatment is successful nothing more is required. Many patients live for years, and beyond the slight annoyance of the daily catheterism, have no further discomfort. But unfortunately this is not always so. The treatment not unfrequently breaks down. From some cause or other—perhaps from want of care in cleaning the catheter, and perhaps from some hidden cause which we are unable to ascertain—the urine becomes thick and offensive, intense desire to empty the bladder and inability to do so necessitate a more frequent catheterism, till rest is constantly disturbed and death is rendered imminent. In another class of patients the treatment cannot even be adopted. The patient, often belonging to the working class, has from carelessness, procrastination, or inability to face the necessary expense, delayed seeking for surgical aid till his symptoms become urgent. He has retention of urine, is suffering from extreme pain, and must needs seek relief. The surgeon relieves him by passing a catheter, and, when the acute symptoms have subsided, attempts to teach him to pass one for himself. But he fails in this endeavour. Whether it be from innate clumsiness, natural timidity, or from the inherent difficulty of the case, the patient is unable to introduce the instrument, and treatment by self-catheterism cannot be adopted. It is under these circumstances that I advocate the trial of a new operation which I recently described in a paper read before the Clinical Society under the name of "supra-pubic prostatectomy."

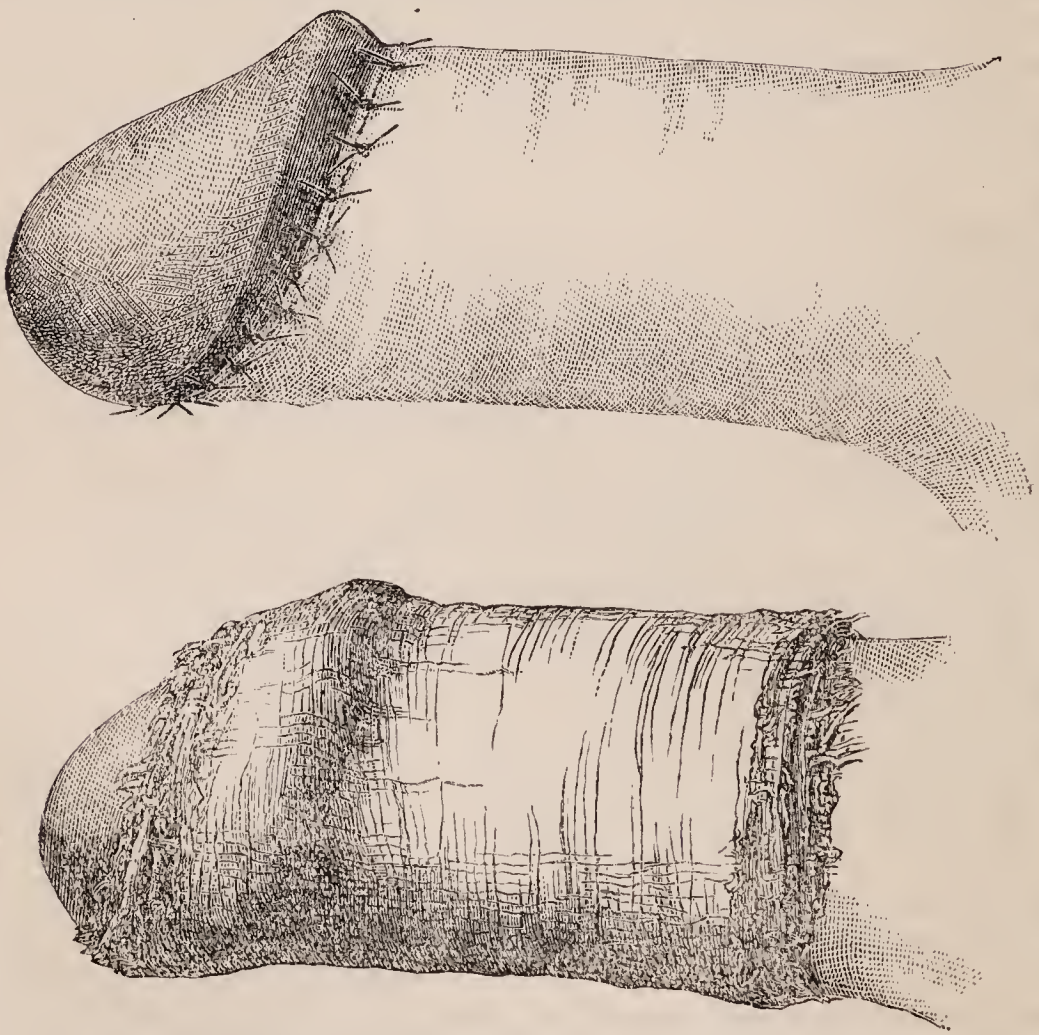
The operation consists of two parts: (1) The opening and drainage of the bladder; and (2) the removal of the prostatic valve which prevents the egress of urine. By opening and draining the bladder, inflammation of that organ is immediately relieved; urine, if putrid and offensive, becomes in a few hours sweet and acid in reaction, and unless the kidneys are diseased, and in some cases even if this is the case, a speedy convalescence takes place. The only question to discuss in relation to this procedure is whether perineal or supra-pubic drainage is the more effectual. My own experience leads me to think that the latter is the preferable method, and that drainage is more complete when through the soft yielding tissues above than through the hard fibrous tissues below the pubic arch. The high incision has, moreover, this advantage—it enables a more thorough examination of the interior of the bladder to be made and the second step of the operation to be proceeded with. It is, I believe, absolutely impracticable to remove the collar-like valve which I have already described through a perineal wound.

The operation is performed as follows:—A full-sized silver catheter, curved according to the nature of the case, is passed into

61.—ON THE OPERATION AND DRESSING OF CIRCUMCISION IN THE ADULT.

By Charles A. Ballance, M.S., Surgical Registrar to St. Thomas's Hospital, London.

The pain and discomfort which follows the operation of circumcision in the adult is often very considerable. Any means by which these inconveniences would be lessened or obviated would be welcome. It occurred to me to employ in adult circumcision the same dressing which it is customary to apply after experimental lesions in animals, when every effort is required in order to obtain asepsis and the primary union of the wound. Indeed, often the experiment will fail unless the antiseptic precautions adopted are successful. Of this fact I have had special experience after removing portions of the motor area of the cortex of monkeys. The edges of the scalp are united by a large number of horsehair stitches, and then after a thorough soaking in an antiseptic solution the parts are dried with sterilised gauze. Two layers of gauze are



Drawn from photographs.—The upper sketch shows the stitches *in situ*. The lower drawing shows the dressing applied

placed over the wound, of width and length sufficient to extend some little distance beyond it, and the dressing is then brushed over several times with collodion, which soaks into the gauze and securely fixes it in position. It is this method of dressing that I have carried out with advantage after circumcising men.

Briefly, the technique of the operation is as follows:—When the patient is etherised the outline of the posterior border of the glans is marked on the skin with an aniline pencil. The skin of the prepuce is slit and removed up to the aniline line. The mucous membrane is next cut away, leaving only a free edge of about one eighth of an inch in width. Any bleeding which occurs should be entirely arrested and asepsis must be ensured by frequent sponging with carbolic or sublimate solutions. Numerous horsehair stitches are then inserted, so as to bring accurately together the fresh-cut edges of the skin and mucous membrane, and subsequently, after a further sponging and drying, a piece of gauze two layers in thickness, and wide enough to reach from the root of the penis nearly to the meatus, is wrapped *loosely* round the penis, and secured by several applications of the collodion brush. The setting of the collodion is hastened by the use of a fan, so that the air is kept in motion, and the patient should not be allowed to recover from the anæsthetic until the dressing is quite firm and hard.

In this manner the penis is protected by a kind of carapace, and the patient is relieved from the pain and tenderness attendant upon contact with the bedclothes or other objects. In fact, the organ can be handled as if no operation had been performed. It is hardly necessary to add that erections, which are under the usual conditions so painful, cannot occur.

The patient, from photographs of whom the drawings were made, never had any discomfort from first to last, and the day after the operation put on his trousers without my leave, and expressed himself as desirous of taking a long walk or of going to business.

The points to note are:—(1) The operation must be aseptic; (2) The gauze should be applied *loosely*.

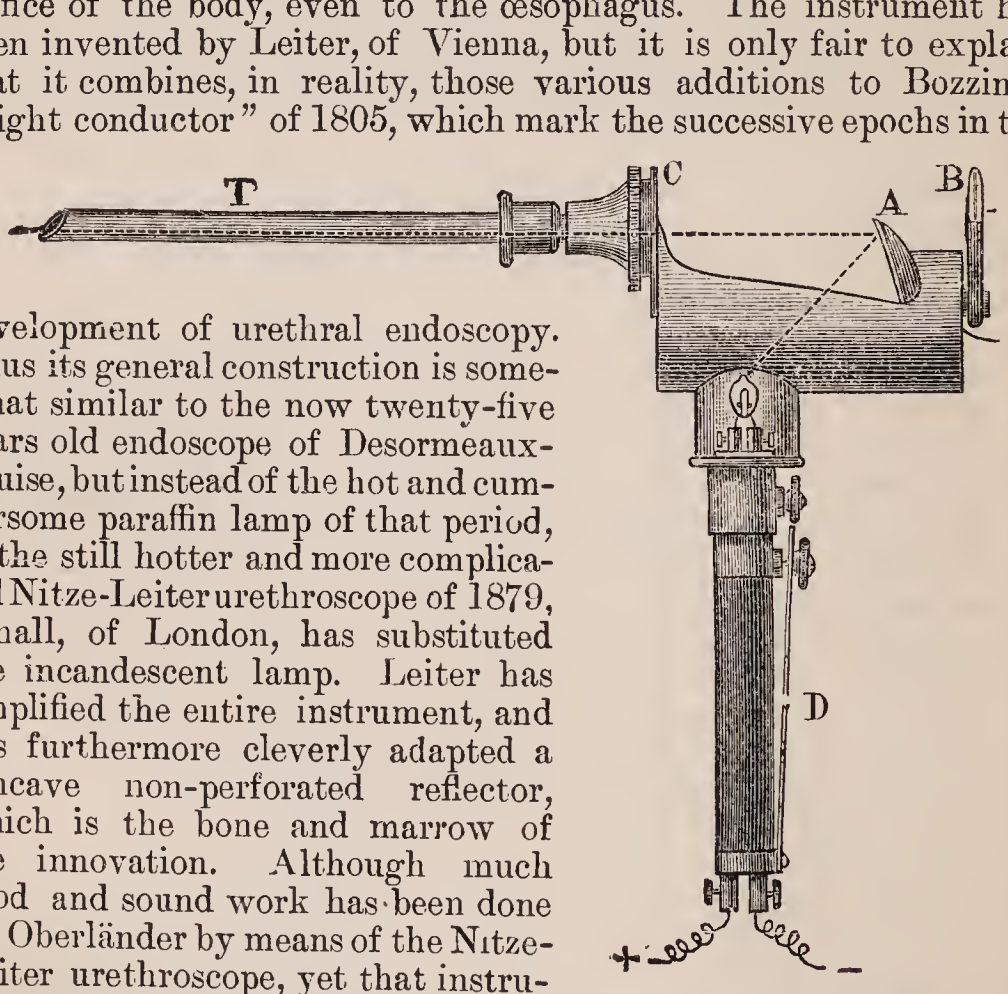
The dressing can be made to extend, at the will of the operator, as far forwards as the meatus externus. Half an inch, however, in front of the corona is ample. If the dressing has been put on rather tightly, and some swelling of the glans beyond the dressing occurs, this can be combated by an extension of the collodion dressing forwards to the urethra, or by the constant use of iced dilute subacetate of lead lotion. When necessary, the dressing can easily be removed by slitting it up by means of blunt-pointed scissors. It is usually worn for about a week. As yet I have never found it necessary to apply it a second time.—*St. Thomas's Hospital Reports, vol.* xvi., *p.* 198.

62.—ELECTRIC ILLUMINATION OF THE MALE URETHRA.

By E. Hurry Fenwick, F.R.C.S., Assistant Surg. to the London Hospital, and to St. Peter's Hospital for Urinary Diseases.

Since April, 1887, a simple, practical, and most efficient urethroscope has been placed in the hands of the profession, by means of which the entire urethra can be brilliantly illuminated; so that those diseases of that canal grouped for convenience under the term "gleet," which sometimes prove so rebellious, and are often obscure in their causes, can now be as scientifically studied as they can be effectively treated.

I have used the instrument in over fifty cases of gleet and stricture, and believe it to be the best and the most generally useful of any endoscope yet invented, for it can be adapted to every orifice of the body, even to the œsophagus. The instrument has been invented by Leiter, of Vienna, but it is only fair to explain that it combines, in reality, those various additions to Bozzini's "light conductor" of 1805, which mark the successive epochs in the development of urethral endoscopy. Thus its general construction is somewhat similar to the now twenty-five years old endoscope of Desormeaux-Cruise, but instead of the hot and cumbersome paraffin lamp of that period, or the still hotter and more complicated Nitze-Leiter urethroscope of 1879, Schall, of London, has substituted the incandescent lamp. Leiter has simplified the entire instrument, and has furthermore cleverly adapted a concave non-perforated reflector, which is the bone and marrow of the innovation. Although much good and sound work has been done by Oberländer by means of the Nitze-Leiter urethroscope, yet that instrument has never found favour or been in general use, because of its costliness, unwieldiness, and complication.



Leiter's Electric Endoscope for Urethral Examination.

Construction.—The incandescent-lamp urethroscope is made up of three pieces, D, B C, and T. These pieces may be described as follows: 1. The handle D is made of caoutchouc, and carries on its upper end a small incandescent lamp, which is connected with two

binding screws which project from its lower end. A light steel spring forms the key. The handle fits into the bottom of the lantern B C. 2. The lantern B C is a roofless gutter-shaped box, carrying at one end a fixed obliquely-placed, concave mirror A, for reflecting light along the urethral cannula T, and at the other the nozzle C for fitting on the urethral tubes. Two additional and important items of the lantern consist in small perforations around the lamp for ventilating off the heat, and a small movable lens B for myopic or hypermetropic observers. 3. A series of urethral cannulæ T of various sizes and lengths. (Those supplied at present by Leiter are not long enough.)

A glance at the figure will show that the light from the lamp is cast directly along the tube, and that the observer's eye, which is placed at B, is shielded from the blinding light emitted by the lamp. It is worked by a small plunge battery of four cells.

Directions for Use.—Select a long cannula, and of a size suited to the meatal calibre. Use glycerine as the lubricant. Pass the cannula up to the hilt after injecting a few drops of a 4 per cent. solution of cocaine. Every part of the urethra can now be examined as the cannula is withdrawn. If the cannulæ are marked in inches, a note of the exact position of the diseased mucous membrane can be made for future reference. Frequently a drop of mucus, gleet, or the lubricant will obscure the surface of the mucous membrane; a pledget of cotton-wool on a stylet removes it, hence it is wise to use as little glycerine as possible. Should the wool slip off the end of the stylet it will be passed on urination, or may be removed by a hook-ended stylet applied through the cannula.

Capabilities.—The illuminating power is very considerable. Every section of the urethra can be thoroughly examined, and every detail of its surface can be as easily studied as if the canal were exposed to bright sunlight. Any change can, with practice, be detected immediately. But more than this; every diseased patch can be treated topically without withdrawing the cannula, for the reflector is so deeply placed in the lantern that bougies, or stylets armed with wool or medicaments, can be passed over its summit (Fig. 1 A, after twisting away the lens B), and down the cannula in the very axis of the light. Thus, as in the Desormeaux-Cruise instrument, the observer can govern the method and extent of his treatment, and watch the effect at the same time. The urethroscope has never been a popular instrument, and I believe it is due to this fact that so many of the long-standing, neglected gleets lapse into stricture. It is certain, however, that with a simple and practical urethroscope such as this is, and a greater visual knowledge of urethral disease, we shall have fewer false diagnoses of stricture; and, doubtless, fewer instances of normal urethræ "worried into stricture" by unnecessary and harmful instrumentation.—*British Medical Journal, March* 3, 1888, *p.* 462.

AFFECTIONS OF THE SKIN, ETC.

63.—ON THE TREATMENT OF CARBUNCLE BY SCRAPING.

By Herbert W. Page, M.C., Surgeon to St. Mary's Hospital.

I make no apology for offering some remarks upon a disease which was thought worthy of a place in the Clinical Lectures of Sir James Paget. I wish to speak more especially on the treatment of carbuncle by that plan of free scraping away which you have seen practised in the hospital. I assume that you are familiar with the usual appearances, and that by the size and severity of the local inflammation, by the angry look, and the boiling out through many openings in the sloughing skin of the unhealthy gangrenous tissue beneath, you are able to say when the term "carbuncle" may be properly applied. I assume also that you know what is the general condition of patients thus afflicted, how, even in cases where there is no such special debilitating cause as diabetes, there has commonly been an antecedent state of ill-health, brought about very possibly by over-work, insanitary surroundings, or insufficient food, and how the carbuncle tends further to increase the debility so induced, by establishing one of those vicious circles which we so continually are trying to break down. As debility led originally to the carbuncular inflammation, so this in its turn increases the debility, until the patient's condition may be one of great danger, demanding the use of every means likely to keep up his strength, and thereby obviate the tendency to die. If you turn to your textbooks you will learn a good deal which is of importance as to maintaining his strength, but you will find little that is satisfactory as to the local treatment of the disease. On this point opinions have differed widely, some surgeons advocating free crucial incisions to relieve both tension and pain, at the risk even of much bleeding, which is clearly a thing not to be lightly regarded in the circumstances; others thinking the separation of the slough may be hastened by pushing small pieces of potassa fusa through the skin-holes into the gangrenous tissue beneath, a plan of treatment from which I hope myself to be preserved; some advising pressure; most recommending the use of well-made and frequently changed hot linseed poultices for the relief of the pain, for the softening and detachment of the sloughs.

With the method by incision Paget deals at length in his lectures; but, without repeating his arguments against it, I may tell you that, from the observation of many cases, he had arrived at the general conclusion that the best of all treatments was to "do nothing," understanding by that phrase that his patients were "carefully fed, washed, cleaned, and bedded, and their carbuncles were very skilfully dressed and washed with proper things, and every care was taken to shut out all untoward influence from them."

Thus treated "no complications occurred, and therefore the cases remained without treatment, as it is said—that is, without medicine, and with no active surgery, no incisions, or anything of that kind." And then he goes on to speak on the value of poultices and perfect cleanliness; of the need in some cases of opium; of the smaller need than is commonly imagined for excessive feeding or stimulants; of the vast importance of letting the patient have very free air. Nor had the experience of ten more years, and the opportunity of having seen a much larger proportion of fatal cases, as we are told in an appended note, led him to deviate from this plan.

Now, all these methods of treatment, whether by incision, by potassa fusa, by pressure, or by poulticing, have this in common, that the tissue which has been destroyed by the violent inflammation is left to be got rid of in Nature's own way, by cessation of the gangrenous process, by the formation of granulation tissue, and by gradual detachment of the sloughs which have been formed in and beneath the skin. During this slow and tedious process the patient is subjected to many risks, and has much to contend against, the worst of them being exhaustion and pain, septicæmia and pyæmia, and it is from one or other of these last conditions that death commonly ensues.

In speaking of acute septic gangrene, you have heard me advise that the best thing for the patient is to get rid as soon as possible of the gangrenous area or limb, and, as an example, you could not have a better case than that of the lad whose thigh was amputated on the 16th, whose temperature fell at once from 106° to 99°, and who was rescued in the nick of time from a state of supreme danger.

Descending from great things to small, I believe that the risks incidental to carbuncle may be avoided and the general condition of the patient very rapidly improved, by the free removal of the carbuncle by scraping with a Volkmann's spoon, or rather with Lister's scraper. You know perfectly well the many conditions in which this comparatively new and most useful instrument is employed in surgery: for scraping away unhealthy granulations, strumous or lupoid, diseased glands or synovial thickenings, and in a hundred other ways, but in none is it, I think, of more immediate or practical benefit than for the bodily removal of sloughing tissue of a large carbuncle. You object to it, perhaps, that there must be severe bleeding, the very thing we spoke of as undesirable in the treatment by crucial incision. Experience, however, shows that there is nothing of the kind. We have been astonished at the singularly little bleeding which has arisen even in the most extensive scraping. and I feel pretty confident that there is no danger on this score.

The mode of treatment is simplicity itself. The patient is anæsthetised, and if the slough has not already begun to boil through

AFFECTIONS OF THE SKIN, ETC.

63.—ON THE TREATMENT OF CARBUNCLE BY SCRAPING.

By Herbert W. Page, M.C., Surgeon to St. Mary's Hospital.

I make no apology for offering some remarks upon a disease which was thought worthy of a place in the Clinical Lectures of Sir James Paget. I wish to speak more especially on the treatment of carbuncle by that plan of free scraping away which you have seen practised in the hospital. I assume that you are familiar with the usual appearances, and that by the size and severity of the local inflammation, by the angry look, and the boiling out through many openings in the sloughing skin of the unhealthy gangrenous tissue beneath, you are able to say when the term "carbuncle" may be properly applied. I assume also that you know what is the general condition of patients thus afflicted, how, even in cases where there is no such special debilitating cause as diabetes, there has commonly been an antecedent state of ill-health, brought about very possibly by over-work, insanitary surroundings, or insufficient food, and how the carbuncle tends further to increase the debility so induced, by establishing one of those vicious circles which we so continually are trying to break down. As debility led originally to the carbuncular inflammation, so this in its turn increases the debility, until the patient's condition may be one of great danger, demanding the use of every means likely to keep up his strength, and thereby obviate the tendency to die. If you turn to your textbooks you will learn a good deal which is of importance as to maintaining his strength, but you will find little that is satisfactory as to the local treatment of the disease. On this point opinions have differed widely, some surgeons advocating free crucial incisions to relieve both tension and pain, at the risk even of much bleeding, which is clearly a thing not to be lightly regarded in the circumstances; others thinking the separation of the slough may be hastened by pushing small pieces of potassa fusa through the skin-holes into the gangrenous tissue beneath, a plan of treatment from which I hope myself to be preserved; some advising pressure; most recommending the use of well-made and frequently changed hot linseed poultices for the relief of the pain, for the softening and detachment of the sloughs.

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Thus treated "no complications occurred, and therefore the cases remained without treatment, as it is said—that is, without medicine, and with no active surgery, no incisions, or anything of that kind." And then he goes on to speak on the value of poultices and perfect cleanliness; of the need in some cases of opium; of the smaller need than is commonly imagined for excessive feeding or stimulants; of the vast importance of letting the patient have very free air. Nor had the experience of ten more years, and the opportunity of having seen a much larger proportion of fatal cases, as we are told in an appended note, led him to deviate from this plan.

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The mode of treatment is simplicity itself. The patient is anæsthetised, and if the slough has not already begun to boil through

openings in the skin, a small central incision, or incisions, is made into the parts beneath, and then with the spoon you scrape out every particle of sloughing tissue, working down into the depths, going from part to part, controlling by gentle pressure any venous oozing there may be here while you are scraping there until the whole slough is cleared out; and such skin as seems to be dead, blue, and bloodless you may cut away with knife or scissors, although it is marvellous how much of apparently worthless skin will return to life, and had better be preserved. Then, having well irrigated the large open wound with perchloride or carbolic lotion, you dust iodoform over it, bandage upon it with some pressure wood-wool pads, and the procedure, which hardly deserves the name of an operation, and which has not taken many minutes, is at an end.

The following cases may be cited in illustration of what has been said and in support of the usefulness and value of this plan of treatment, which I cannot help thinking will come in time to be very generally employed.

Case 1.—R. F., aged 41, admitted April 27th, 1887, looking wasted and very ill, has been out of work for a long time, has been starved, and been mentally much depressed. A carbuncle has been forming between his shoulders for the last eighteen days. It measures eight inches in one diameter, six inches in another, and is boiling out by many openings. He is in great pain. His pulse is very feeble, his morning temperature is 100·2°, and he looks like a man who has been starved. There is no albumen or sugar. On April 29th the carbuncle was freely scraped away; there was no hemorrhage. The same evening his temperature was 102·6°, and in the following morning and evening 100·6° and 100·4°. He expressed himself as already feeling much better, and thereafter, with a normal temperature, the history is one of rapid improvement. In five days the surface was covered with healthy granulations, and healing took place in the usual way, being helped later on by skin grafts, under the careful dressings of Mr. Kershaw. He left the hospital on June 21st.

Case 2.—H. B., aged 65, the subject of a circular carbuncle, five inches in diameter, on the back of the neck and occiput, was admitted on May 25th. It had begun as a pimple three weeks before, and was now boiling out in a typical manner. He was very weak and ill, and in great pain. On May 26th the whole thing was scraped away; there was no bleeding. The large surface cleaned rapidly, and by June 6th was covered with healthy granulations. His rapid general improvement was in every respect most striking. After the removal of the carbuncle he lost all pain, and soon began to enjoy his food. He was discharged on August 2nd.

Case 3.—N. S., aged 55, was admitted on September 7th. Has been suffering for some time from cold and indigestion, and looks

weak and ill. There is no albumen or sugar. He has a carbuncle four inches in diameter on the back of his neck, which began fourteen days before with aching pain, and the formation of a pimple which rapidly increased in size. The pain is great, although the carbuncle is much broken down. On September 8th the carbuncle was scraped away by my house-surgeon, Mr. Crowle. By September 16th the surface was covered with healthy granulations, and healing forthwith went on in the usual way. His general appearance at once improved, and from the day after the operation he had freedom from pain. Discharged October 4th.

Our latest case was treated yesterday by Mr. Norton, my present house-surgeon. To-day the man looks much better, and is quite free from the severe pain which he was suffering before the scraping.

That each and all of these patients derived immense benefit from the treatment, there could be at the time no doubt, nor is there any, I think, that the risks of septicæmia, pyæmia, and exhaustion were very much lessened. Clearly, it cannot be otherwise than an advantage to get rid as early as can be of so nasty a thing as a carbuncular slough, as I hold it is the right thing to get rid of sloughs however caused. You may remove them too late, you can hardly do so too soon. Many of you know the woman in Manvers ward, who was so long an in-patient because of an extensive burn of arm, breast, side, and axilla, who began on the sixth day to wander and have high temperature, and to be distinctly septicæmic, and who rapidly improved, and whose temperature fell as soon as Mr. Crowle had carefully scraped away the sloughing tissue. So, also, is it with the scraping of carbuncles.

This plan of treatment has, no doubt, occurred to and been practised by other surgeons, but a search through books and journals has enabled me to find only one paper bearing on the subject. This paper "On Scraping in Surgery" appeared in the Liverpool Med. Chir. Journal, Jan. 1887. (See *Retrospect*, vol. xcv, p. 25). I will read to you what Mr. Teale, the writer of it, says:—

"*Carbuncle.*—Probably in no disease involving severe pain, and occasionally threatening life, is treatment by scraping more conspicuously of value than in carbuncle. A central crucial incision of moderate size, with vigorous scraping in every direction in which the scraper can penetrate into the half-dead tissue, will cleanse the diseased mass of much of the half-dead, putrefying, poisonous material. The main attack should be supplemented by smaller crucial incisions and scrapings in the contiguous carbuncular skin, and by numerous small incisions or lancet-punctures into any neighbouring skin, which, though not carbuncular, is œdematous, infiltrated by the spreading poison, and already half-condemned to a destructive career. Having rid the mass as far as possible of all diseased, decaying, infecting material, the resulting

cavities and crevices should be well soaked, either with pure carbolic acid, carefully used so as not to scald the skin, or perhaps more advantageously with 'glycerin. acid. carbol.' so that every crevice where half-dead tissue remains may be soaked and penetrated. Finally, the raw surface is well charged with iodoform, and dressed with salicylic acid or some such absorbent antiseptic material. The result is cessation of pain and feverishness, restoration of normal temperature, and a rapid establishment of comfort, convalescence, and healing."

I could wish for no better encouragement in bringing this mode of treatment to your notice than that it should have found an advocate in Mr. Teale, of Leeds.—*British Medical Journal, March* 24, 1888, *p.* 635.

64—ON A CASE OF RAYNAUD'S DISEASE, OR SYMMETRICAL GANGRENE.

By J. W. F. Smith-Shand, M.D., Professor of Medicine in the University; Physician to the Royal Infirmary, Aberdeen.

J. A., aged 20, a servant, was admitted into the Royal Infirmary on May 24th, 1887, complaining of pain in the hypogastric and lumbar regions, with frequency of micturition, which symptoms, she stated, had been present for the last four days. Her appearance was striking, as the face was much flushed, the lips swollen, with the mucous surfaces of a purplish colour, and a general erythematous redness all over the body. The skin was moist, and the patient said her body felt hot. Her face was heavy and dull in expression.

Three hours after admission her temperature was 104°, respirations 40, pulse 125 per minute. On physical examination, heart sounds normal, pulmonary percussion normal. On auscultation, breath sounds harsh. No cough or expectoration. Liver normal; spleen slightly enlarged; tongue dry and coated with white fur; great thirst; appetite bad; bowels confined. There was marked tenderness on pressure over the lumbar regions. Urine scanty, specific gravity 1030, acid reaction, dark yellow in colour, with sediment composed of lithates and pus; upper portion showed trace of albumen.

On the 25th the temperature was 104·4°, but, under the use of antipyrin, fell to 101·6° in the evening. As she said she was unable to pass urine, the ward sister used the catheter and drew off 42 ounces.

Twenty-four hours after admission she complained of great pain in the ears, and shortly afterwards symmetrical black patches appeared on the lobes, and after some time became filled with dark serum. Soon after this other black patches appeared symmetrically on each cheek and on the point of the nose. Still later, on the

following day (26th), other symmetrical spots were seen on the face and neck, on the arms, hands, and legs above each knee. No patches appeared on the trunk, fingers, or feet. The largest patches were on the arms. The one on the right measured seven inches in length and three and a half in breadth; the patch on the left arm measuring five and a half in length and three in breadth. Before these patches appeared the patient complained of a severe burning sensation in the parts, which was greatly intensified on pressure. They appeared suddenly, and were of a very black colour; the margins were distinctly marked, there being no shading of colour. The surface of the patches was covered with moisture. After the patches appeared the general erythematous condition diminished very considerably.

For eight days the patches remained as described, but after that a reddish border appeared around them, and by the tenth day they began to shrink in length and breadth, and by the thirteenth day sloughing sores had formed on the arms, and were dressed with carbolic oil and enveloped in cotton wadding. The ulceration was quite superficial. The patches on the ears, cheeks, and neck shrank and dis-

appeared, leaving a small thick crust, which gradually got smaller and dropped off, leaving on the left ear a certain amount of atrophy of the tissue. On the ninth day after admission the lumbar pain and frequency of micturition began to abate, the pus and albuminuria diminished, and by the eleventh day these symptoms had completely disappeared. Since then her only complaint has been of thirst, and pain when the arms were being dressed. The temperature ranged high for over three weeks, the maximum being marked on May 28th, when it was 104·6°. During the second week of her illness she had diarrhœa for several days, having five stools on June 3rd.

The treatment consisted in giving ten-grain doses of antipyrin for the first three days every six hours, and afterwards a mixture containing arsenic and strychnine every six hours.

Previous History.—Patient, up to the age of 16 years, enjoyed good health, but since she first menstruated (when 17 years old) she has always suffered more or less from dysmenorrhœa and irregular menstruation; she menstruated last on May 7th. She told Mr. Shirras that she often complained of chilblains in the winter time, and suffered more or less from cold hands and feet. She denied this to me, but said that four years ago, when she was in the House of Nazareth, she, along with many others, had little red lumps about the size of pins' heads on her fingers, and that the nails cracked and came off, and at present the nail of the forefinger of the left hand is fissured. This winter she told me she suffered from cold hands and feet, and her hands were blue and swollen, but "not like chilblains."

On April 28th of this year she was admitted into the Infirmary under me, but during my absence from home, complaining of severe pain in the lumbar and iliac regions, and retention of urine. Mr. Williamson, then house-physician, considered this last symptom as hysterical, and refused to draw off her urine, and in a short time she passed it all right. At this time a bulla, about the size of a five shilling piece, developed on her left hand. It was very painful, containing at first clear serum, but rapidly becoming purulent. It was punctured, and in three days had quite healed; she was dismissed on May 7th "cured."

Under the date of July 4th I have to report that the patient says she is quite well, that the ulcerated surface on the left arm has been perfectly healed for the last three days, and that on the right arm there are now two ulcerated spots, one about the size of a sixpence, and the other being half an inch in length and half an inch in breadth.

[The accompanying engraving copied from a photograph represents the Right Side of the patient in Dr. Smith-Shand's interesting case.]—*BritishMedical Journal, Feb.* 18, 1888, *p.* 343.

65.—ON THE CLINICAL CHARACTERS OF COMMON LUPUS.

By Jonathan Hutchinson, F.R.C.S., F.R.S., LL.D., Emeritus Professor of Surgery at the London Hospital.

[We regret that the limits of our space do not permit the reproduction *in extenso* of Mr. Hutchinson's Harveian Lectures on Lupus. We have endeavoured, in this and the following articles, and also in the *Synopsis*, to abstract, so far as the lectures will lend themselves to such a process, the more salient portion of the author's complete and exhaustive clinical analysis of the many varieties and related conditions of the Lupus process. To indicate the general scope of the Lectures we cannot do better than reproduce here the lecturer's recapitulation of his main arguments, as follows:—

"It has been sought to show that there are a large number of maladies, some of them, it is to be admitted, very rare, but yet of extreme interest, which are cognate with common lupus, and that between common lupus and lupus erythematosus there are bonds of essential relationship, whether we regard their clinical features or their histological characters. Next, it has been made probable that all forms of lupus are in occasional relationship with the state of health which gives liability to tuberculosis and to diseases of the scrofulous class; but in limitation of this it has also been proved that many lupus patients are in excellent health, and that there appears to be some proneness to cancer as well as to tubercle. That lupus begins as an inflammation under the influence of various exciting causes and derives its peculiarities from the part affected, and the special structures in that part, as well as from the age and proclivities of the patient, has also been asserted. Thus it has been sought to discredit the supposition that lupus, or any of its peculiar forms, deserves such terms as *sui generis*, the implied creed being that they are closely related amongst themselves, and also to other various pathological processes. The doctrines of infective spreading and system-contagion have been asserted as being explanatory of the phenomena of lupus, and as finding in it some of their best illustrations. The laws of hybridity and those of partnership in disease have also been appealed to, as well as those of modification in hereditary transmission, under which latter it has been attempted to establish the pedigree of the very remarkable malady known as Kaposi's disease."]

All observers are agreed that lupus is a disease which usually begins in early life, and which, although it may affect mucous membranes, almost always has its first development in the skin. It prefers exposed parts, and attacks the face out of all proportion to other regions. It is insidious in commencement and very slow in progress. Its characteristic feature is the formation in the corium of a peculiar effusion, or cell growth, which is visible to the naked eye through the transparent cuticle. This growth is of a brownish-

yellow tint, and semi-translucent, being aptly compared to apple-jelly. It is present in greater or less abundance in all cases of common lupus, but may easily be obscured by the products of inflammation. The recognition of this apple-jelly growth, in however small a quantity, denotes the disease conclusively as lupus, for nothing exactly like it is ever seen in any other disease. It often happens that we succeed in finding it at only one part of a large lupus patch, or in only one patch, where there are several which do not show it; but I may repeat that whenever it is thus sparingly present, it is yet sufficient to justify the diagnosis as regards the whole of the diseased processes which it attends. Whether this growth is present in the very earliest stage of the disease, or whether that be not rather simply one of inflammation, is not yet known, but it is certainly the condition which first justifies the application of the name "lupus," and is often recognised while the disease is yet on an exceedingly small scale. Although a few cases are seen in which the growth, through a long course of years, pursues its quiet course of gradual extension, without ulceration, and almost without inflammatory redness or swelling, they are exceptional; and in a large majority, at one or other period, the tissues break down and ulcers form, attended usually by the formation of of papillary granulation masses, covered by crusts of pus and epidermic scales. Most of the dinstinctive terms employed in reference to lupus by the older surgeons have reference simply to the presence or absence of inflammation. We may disuse with advantage the old terms exedens, and non-exedens, exulcerans, hypertrophicus, serpiginosus, exfoliativus, and the like, and speak simply of inflamed lupus and non-inflamed lupus, for all the epithets alluded to generally refer to peculiarities produced by more or less active inflammation. The same case may vary in respect to them in different parts at the same time, and at different times in the same part They have, too, been used by different authorities with very varing meanings. I much fear that, before I have done, you will accuse me of introducing new names whilst I disuse the old; but I hope to be able to convince you that those which I shall propose are based upon real and permanent clinical distinctions. If a man has a large family, he must, for convenience sake, give to each child a distinctive name. It is so with lupus. The diseases to be grouped under that name are related—closely related, but they are yet different—and it is necessary that we should distinguish them.

It will be convenient that I should here introduce to your notice a schedule of the various forms of lupus which we meet with in practice. I shall now discuss its details, but it may be well to state that where I have joined two substantives together as a name for a sub-species of the malady, it is with the intention of asserting that the disease so named partakes of the characters of both. Thus acne-lupus is not a lupus resembling acne, nor an acne look-

ing like lupus, but is acne and lupus in combination. It occurs at the age at which acne is common, and in the subjects of common acne, differing from it only in that some of the pustules become the

The Lupus Family.

General Definition.—Serpiginous, infective, scar-leaving inflammations of skin and mucous membrane.

Lupus Vulgaris.

Distinctive Features.

a. Apple-jelly-growth usually present and characteristic
b. Non-symmetry the rule
c. Tendency to ulcerate
d. Common in children
e. Affects the two sexes almost equally
f. Not closely allied to chilblains
g. Very seldom fatal

Principal Forms.

Struma-lupus (with subcutaneous abscesses and gland disease).

Common lupus (its typical forms)

Clinical Groups.

1. Single patch.
2. Multiple.
3. Of hands and feet.
4. Necrogenic lupus.
5. Of mucous membranes.
6. Of septum nasi.
7. Lupus mutilans.
8. Lupus with elephantiasis.

Acne-lupus (very rare).
Eczema-lupus (very rare).
Psoriasis-lupus (very rare).
Nævus-lupus (very rare).
Lupus lymphaticus (very rare).

Sycosis and the Rhino-scleroma of Hebra are probably allied diseases.

Lupus Erythematosus.

Distinctive Features.

a. Little or no apple-jelly-growth
b. Symmetry the rule
c. Non-tendency to ulcerate
d. Not seen in childhood
e. Far more common in women than in men
f. Closely allied to chilblains
g. Sometimes fatal

Principal Forms.

Seborrhœa-lupus (=lupus sebaceus)

Erythema lupus (its typical forms)

Clinical Groups.

1. Restricted to face.
2. Face and extremities.
3. General diffusion.
4. With recurring erysipelas.

Chilblain-lupus.
Sunblain-lupus.
Acne rosacea-lupus (very rare).
Psoriasis-lupus (very rare).

Kaposi's disease is probably a "family form" of lupus erythematosus.

site of lupus-processes. So with eczema-lupus: the disease begins as eczema, and throughout looks like it, but it has these peculiarities, that it is well nigh incurable, slowly advances at its edges, and heals in the centre, leaving a scar. It is an eczema which produces the results of lupus, and therefore clearly partakes of its nature. I cannot but think that this plan of joining substantives, each one having already a well known meaning, conveys what it is intended to imply with far less trouble to others than can possibly be attained by coining uncouth adjectives, which are at the best more or less inappropriate.

In dividing lupus into two great groups, as vulgaris and erythematosus, I yet wish it to be clearly understood that they are closely allied. There are numerous connecting links, and cases often occur which it is impossible to assign exclusively to either.

In all its varieties, and in all stages of its development, the lupus patch gradually spreads at its edges. It is necessary to consider this tendency to creep on into all adjacent parts in a little detail, for it is a most important feature. It proves that lupus action is attended by the production, in the part affected, of elements which are infective to those with which they are in contact. In this power of infection by continuity of tissue, we have one of its most characteristic features, and we have also an important guide to its treatment. Not only, however, do we witness the gradual extension of lupus patches by growth into continuous parts, but we observe almost invariably another phenomenon of a slightly different order. This is the production of other foci of diseased action not continuous with the original patch. To these when they are, as is usual, very near the first, we may suitably give the name satellites, and may imply by it that we believe that they originate, as the moon from the earth, from materies directly detached from the larger mass near to which they are seen. We have in them an example of infection by contiguity, and the infective material has no doubt spread either in the perivascular spaces, or along the lymphatic channels. The phenomenon is exactly parallel to what we witness in the case of cancer of the skin, in which the production of satellite nodules of smaller size near to the parent one is very common. In many intances the satellites and their parent, by gradual extension at their borders tend to coalesce. Although it is the rule for secondary lupus growths to occur near to the border of the original patch, yet this position is not invariable, and we sometimes observe them at considerable distances from it. Thus a patient may have primary lupus on the nose, and may have secondary patches on the arm or leg. Both in cancer and lupus proximity of infection is the rule, but distant infection is possible, and not very rare, and the two are to be explained in the same way. It is almost a matter of chance where these may develope. This rule is to some extent reversed in the case of lupus erythematosus.

The lupus process, although very slow, yet always tends to come to an end after a time, and it always, when it does thus end, leaves the structures disorganised and in a state of scar. The kind of scar is often peculiar. It is thick and firm and is seamed with white, so as to have suggested a comparison to veal. These peculiarities are probably due to the fact that the scarring has taken place without complete removal of the lupoid cell-material. By degrees this removal will become complete, and then the scar will become supple and thin. In many instances it is supple and thin from the first. It is by no means necessary to the production of scar after lupus that there shall have been ulceration. The scar may be wholly subcuticular, and is so in many instances, the disease having disorganised the corium, but left the cuticle almost uninjured. A tendency to the production of scars is invariable in lupus, but there are many slight cases in which the recognition of scar is difficult. An absence of tendency to infect lymphatic glands must be noted in all forms of lupus, and with it an absence of tendency to travel deeply or to involve parts other than the skin. It is essentially a disease of skin and mucous membrane, and does not, with the rarest exceptions, attack other tissues. When ulceration has occurred there is usually a remarkable proclivity to the formation of granulations which assume papillary forms and over which scar-tissue readily develops. The removal of lupus-crusts is almost always attended by bleeding, for these papillary outgrowths are united to the partly organised crust, and are very easily torn.

Lupus-disease in all excepting its most quiet and absolutely non-inflammatory forms is very liable to be attacked by erysipelas. Some patients have many such attacks, and although not infrequently they are excited by the use of caustics, yet they are often spontaneous. As a rule, but by no means invariably, the erysipelas is mild. It may, I think, be added to the minor characteristics of lupus that its processes, although slowly retrograde in the structures first attacked, always spread so much in the adjacent ones that nothing of the nature of a complete spontaneous cure ever results. This statement may possibly have a few exceptions, but they are very few.—*British Med. Journal, Jan.* 7, *p.* 6.

66.—ON THE MODIFICATIONS OF LUPUS IN DIFFERENT REGIONS OF THE BODY.

By Jonathan Hutchinson, F.R.S., &c.

These modifications have chiefly reference to different degrees of inflammatory action. In some parts lupus almost invariably inflames and ulcerates. It is rare indeed to find a patch of non-ulcerated lupus on the nose; and, should such be encountered, we may feel quite sure that the condition is only temporary. The same remark applies to the extremities. On the hands and feet

lupus is always inflamed more or less, the degree varying with the season and weather. Often, indeed, it is difficult to diagnose lupus on the feet, so great is the excess of inflammatory material by which it is concealed. I have not in many instances, indeed, recognised the apple-jelly stage, and when it is shown it is never present long, being soon superseded by a mass of fungating granulations. It is, in fact, a clinical fact that lupus-ulcers on the feet very often escape diagnosis, so wide is their difference in appearance from the typical form of the disease. Often, however, the diagnosis is set at rest by the discovery, on other parts of the body, of patches which show the characteristic conditions.

The part in which it is most common to see lupus without any inflammation and absolutely quiet is, I think, the cheek. Here we sometimes see what I have called single-patch-lupus, slowly progressive at its edge, but without satellites, and without any trace of crust or even of congestion. The subjects of such conditions are almost always near middle life and in tolerably good health. If the patient be young or the strength feeble, lupus is almost certain sooner or later to inflame and ulcerate.

There are certain regions of the body which are almost exempt from the attacks of lupus. It is in the main a disease of exposed parts, particularly of parts exposed to cold and wind. The face and the extremities are its most frequent sites. Excepting when it has passed by extension from the limbs or neck, it is very seldom seen on the trunk, and it scarcely ever originates there. The more protected the part as regards warmth, the less is it likely to be the seat of lupus. The genitals in both sexes, the cleft of the nates, and the armpits are almost wholly exempt. This is by no means true of the syphilitic imitations of lupus, which not infrequently display themselves in these regions.

When lupus attacks the lips, and extends to the prolabium, it is almost always attended by much swelling and ulcerative destruction of parts. The explanation of this is, no doubt, that the disease affects the skin surface on the one side, and the mucous on the other, and hence much loss of tissue. The same is observed when the alæ nasi are affected, destruction of the parts being then almost certain. It will easily be realised that the conditions are very different from those which obtain on a flat surface, as the cheek.

Thus, I think, it may be with justice held that many and very important differences which are observed in the lupus process are due not to essential difference in the nature of the disease, but simply to the peculiarities of the part attacked. Anyone who will inspect a considerable series of cases side by side, or examine a collection of portraits, will easily satisfy himself of this, and will observe that the disease may in one and the same patient earn for itself different names, according to the part affected. It is almost always "exedens" when it attacks the nose, often "hypertrophic"

on the lower part of the face, and always "serpiginous" on the neck.

I do not wish, however, for one moment to attempt to explain all the varying features of lupus by reference to the part affected. Many of them have reference rather to the peculiarities of the individual, to his age, and to the state of his general health. Without venturing in much detail upon this topic, I may repeat a statement already made, that the younger the patient the greater is the probability that lupus will inflame and ulcerate, and the greater by very far the risk that its infective material will become diffused, and its manifestations multiple and distant. It is rare in those of middle age to see lupus show itself in more than one place, and the disease at this period of life is almost always very slow in its advance. As old age approaches, we sometimes witness a sort of return to the liabilities of youth, and lupus originating then may prove very troublesome. It is so, however, only in that it may rather rapidly spread and resist treatment, not, I think, in the way of general infection.

From the analysis of 56 cases in which I find the parts affected specified in my notes, it is shown to have occurred on the face in 41, and on the extremities in 15. In 5 of those in which the face suffered, there were one or more patches on the limbs also. In 15 the disease was on the nose only, and in 9 on the cheek only. My notes do not state with sufficient precision on what part the disease commenced, but only the parts affected when the patient came under my observation. We may probably assume that in all cases in which the nose is mentioned it began there, for it is almost unknown for the nose to suffer secondarily, whereas it often causes the infection of other parts.—*Brit. Med. Journal, Jan.* 7, *p.* 8.

67.—ON THE RELATIONS OF LUPUS TO TUBERCULOSIS.

By Jonathan Hutchinson, F.R.S., &c.

All who have observed the disease have been struck by its frequent association with feeble health and with what, until lately, we have known as scrofula. On the other hand all have acknowledged that there are startling exceptions, in which the disease shows itself in those who appear to enjoy great vigour of constitution. The names given by authors, however, sufficiently attest the general assertion that almost all observers have regarded lupus as frequently of a scrofulous type. I am desirous for the moment to avoid reference to histological questions, and to discuss the subject solely on its clinical evidence. It is certainly not common for lupus patients to have definite evidences of tuberculosis of the viscera. I have in the course of many years' experience known two or three who were the subjects of lupus become affected by aggressive phthisis, but they have been very exceptional. The

same may be said, but with more numerous exceptions, as to the occurrence of gland disease or other forms of struma. The lupus patient does not, as a rule, suffer from any other form of disease. More than thirty years ago I collected and tabulated with considerable care a long series of cases of lupus, with the hope of showing by statistics its relation to struma as well in the patient's family as himself. Nearly all my patients were at that time of the hospital class. My statistics did not prove much, and I have not felt encouraged to continue their collation during later years. Nothing is easier than by statistics to show, in reference to any given disease occurring amongst the English poor, either the frequent history of tuberculosis or the reverse. All depends upon the patience and perseverance of the investigator. Most patients begin by denying that any relatives have died of consumption, and most will, if time be allowed, succeed in remembering that such has been the case. More definite facts may be obtained if we restrict ourselves to the causes of death in the patient's parents and amongst his brothers and sisters; but here still are numberless fallacies, and, after all, we know well that such tendencies often overpass a generation. Briefly, I may say that my statistics did not prove the history of scrofula nearly so frequently as the impressions formed by memory would have led me to expect. Out of nearly seventy cases I found the occurrence of other evidences of scrofula in the patient is only 28 per cent., and the history of such disease in any near relative in only 35 per cent. No fewer than 50 per cent. appeared, so far as I could ascertain, to be themselves in good health, and to come of families against which nothing could be established. It is to be remembered also that the impressions formed by casual observations are liable to some error, inasmuch as lupus produces deformities of the visage, and scars in the neck which are precisely of the kind to suggest the offhand suspicion of scrofula. This may easily happen in cases in which, excepting the lupus itself, there may be an entire absence of all evidence of such taint.

In spite of my own statistics, however, I cannot avoid the belief that lupus is, in very many instances, a scrofulous disease; but at the same time I am inclined to the belief that, in most instances, the tendency to disease of this type having begun in the skin, restricts itself to it, and shows little or no tendency to attack internal organs. I well remember a family of three sisters, whom I knew intimately in youth, and whose history may illustrate y meaning. The eldest of these had her neck dreadfully scarred by strumous abscesses in childhood, but she subsequently enjoyed excellent health through a long and vigorous life. The second, always delicate, died of phthisis at 50; and the third, who had never ailed anything else, lost her nose from lupus at about 45. There was a history of tuberculosis in the mother's family.

The more definite the exemption from tuberculous antecedents or concomitants, the more likely it is, I think, that any individual case of lupus will prove non-inflammatory; but there are exceptions on all hands, and I dare not assert anything in this matter with confidence. If the mucous membranes suffer, there is, I think, almost invariably a tuberculous family history. On the other hand, I must admit that the evidence as to family history of phthisis is as strong, or even stronger in the case of lupus erythematosus, as it is in common lupus.—*British Med. Journal, Jan.* 7, 1888, *p.* 9.

68.—ON THE DISTINCTIONS BETWEEN LUPUS VULGARIS AND LUPUS ERYTHEMATOSUS.

By Jonathan Hutchinson, F.R.S., &c.

I have enumerated in order on the schedule ("Clinical Characters of Common Lupus," p. 339) the chief features of difference; but part of my argument is that the two run into each other, and that there are connecting links. No single one of the features of difference is invariably such. Although apple-jelly growth characterises the most marked cases of common lupus, it is very often not to be found, and in some cases of erythematous form the discs of the disease are somewhat thickened, and present this growth in a minor degree (see one of Hebra's portraits). A more trustworthy feature of difference is to be found in the strong tendency to symmetrical development in the erythematous form, and the invariable absence of any definite tendency in this direction in lupus vulgaris. The bat's-wing form assumed by erythematous lupus on the face is well known. We know also that it is not uncommon for the bat's-wings (on the cheeks) to have no continuity with the body (on the nose), and as further illustration of the law of symmetry, we know exactly where to expect the next manifestations of the disease. They will come in the ears, and in both ears, and again without continuity with the cheek patches. Next to the ears, we shall probably see the hands attacked, and it will be both hands. So constantly is this observed, that I have, as just observed, ventured to place the fact that lupus erythematosus tends to develop symmetrically and lupus vulgaris not, foremost amongst the clinical features which distinguish them. It is certainly a very remarkable fact.

Whilst, however, insisting upon its importance, we must not exaggerate it. There are many cases of erythematous lupus which show no symmetry, but they are, I think, all of its sub-class, the sebaceous form. The more purely the disease keeps to the erythema type, the more certain it is to be symmetrical. Thus, I never saw one hand affected and the other free. On the contrary, I never in any single case saw lupus vulgaris, however numerous its patches might be, and however widely diffused, with

any definite symmetrical arrangement. A tendency to symmetry is shown in the multiple lupus of children; but still, the exceptions to it are conspicuous, and far greater than we ever witness in psoriasis, pemphigus, or any other skin disease which is really symmetrical in its outbreaks.

Leaving, however, for a while the further consideration of cases in which lupus erythematosus tends to become symmetrical, or even diffused and general, I will ask attention to exceptional facts.

A lady whom I have chanced to see this very morning well illustrates this argument. She is an example of erythematous lupus in its non-symmetrical form. She has three separate patches—one in front of the ear, one on the temple, and one on the nose, and they are all three on the right side of the face. The explanation of this I take to be that the parent patch was not in the middle line, but over the ear. The others are, I should suspect, satellites to it, that is, they result from the infection of adjacent parts by germinal material which has travelled from it to them. How else explain the fact of their proximity? Yet I must beg you to observe that there are wide belts of quite healthy skin between them.

I have entered into some detail as to this feature of distinction between the two chief groups of lupus maladies because it presents considerable difficulties, and is of great clinical interest. I must be much more brief on what I have to say on the other points.

Respecting the tendency to ulcerate, it is certainly true in a general way that in lupus erythematosus it is but rarely displayed, and only to a very slight extent. The more closely the disease keeps to the erythematous type the less is its liability to ulceration. The epidermis may peel, and the discs may show a dirty epidermis or sebaceous crust, but there will be no pus scab, such as is often seen in common lupus. There is, however, destruction of tissue, and a scar will be left when the disease comes to an end, so that, in a certain sense, we must admit that an ulcerative process does exist. As you may see by reference to Hebra's portrait of lupus erythematosus, it sometimes notches the alæ nasi. Respecting common lupus, moreover, it is not true that it always inflames and ulcerates. Whilst, then, we accept the liability to ulcerate as a feature which in a general way distinguishes lupus erythematosus from common lupus, we must not push it too far.

That typical cases of lupus erythematosus are never seen in early childhood, and very rarely indeed before the age of puberty, all authorities will admit. Lupus vulgaris, on the contrary, may begin during the first stage of infancy, and is very common during the first decennium. I have already suggested, in connection with this noteworthy difference, that it has to do with disturbances of the circulation which ensue in connection with puberty in both sexes, but more especially in females.

All the statistics to which I have been able to refer, those published by other observers as well as my own, show lupus vulgaris as occurring in almost equal frequency in the two sexes, the female sex always having a slight preponderance. I have already remarked that this is very different in the case of lupus erythematosus.

That common lupus does not show any close alliance with that state of health which gives proclivity to chilblains I feel quite sure, for I have collected a considerable amount of clinical evidence on the point. We must distinguish carefully between any liability to feeble circulation and the liability to inflammatory action under the influence of cold, which is the cause of chilblains. Persons especially liable to cold extremities are often quite exempt from chilblains, and the reverse is also often true. Common lupus goes usually with feeble circulation and a retarded venous current, whilst lupus erythematosus is so frequently in association with the liability to chilblains that it is often difficult to tell where one ends and the other begins. In close alliance with chilblains you must allow me to place what we may call the sunblain, a much less common condition of inflammation, which is excited by exposure of the part—tip of nose, ears, or cheek, or possibly even the hands—to the direct influence of a scorching sun. Whatever ensues from influences of this kind, should it become chronic, is almost sure to take the form of lupus erythematosus. I by no means, however, wish to imply that a tendency to chilblains is not frequently met with in association with common lupus. The last feature of difference between the two which occurs in my schedule is that common lupus is scarcely ever fatal, whilst lupus erythematosus, if we except its very minor forms, is a condition which should give rise to serious anxiety. Much might be written on this point. I had long been aware that severe forms of lupus erythematosus were liable to end fatally by attacks of erysipelas, intercurrent pneumonia, or some form of acute catarrhal malady; and in looking up my notes of cases in preparation for these lectures, I have been increasingly impressed with the importance of the disease as a revealing symptom indicative of a state of constitution very likely to prove incompatible with long life. On trying to seek up patients of whose cases I have preserved notes some years ago, I find that in not a few instances they are dead. The cause of death seems to have varied, and in some I have been unable to ascertain it; in some it is said to have been an attack of fever, but in most I believe it has been either pneumonia or erysipelas. In lupus vulgaris we also not infrequently witness attacks of erysipelas, and now and then it is to be admitted they end fatally; but I am sure there is far less danger in this than in the erythematous form of the disease. In some cases of the latter, when it is very extensive, a state of debility and emaciation is induced, which, apart from the liability to attacks of inflammation,

itself threatens to end fatally. In very few cases indeed have I ever known lupus vulgaris so extensive as to cause serious interference with health. The liability to end in pulmonary phthisis is, I think, alike in the two, and is a very slight one.

In now concluding what I have to say as to the features which distinguish these two diseases, I am anxious, even at risk of repetition, to say that they are useful rather for the purposes of clinical diagnosis and arrangement than as implying essential differences. I can entertain no doubt that the two are closely allied, and that they are in a general way induced by a similar kind of causative influences. If such an expression be not too fanciful, I would say that, in the lupus family, vulgaris and erythematosus stand as brother and sister, having many essential resemblances and many strongly marked but superficial differences.—*British Medical Journal, Jan.* 14, 1888, *p.* 59.

69.—ON IMPETIGO CONTAGIOSA.

By George T. Jackson, M.D., Chief of the Dermatological Clinic, College of Physicians and Surgeons, New York.

By the term "impetigo" is now most often meant a disease with pustular lesions, just as we use the term "lichen" to indicate one with papular lesions. In so far the term impetigo contagiosa is justified, since it is a pustular disease. But it is not so from the beginning, for the primary lesion is a vesicle the contents of which soon become purulent. Vesico-pustules, then, are the characteristic lesions of the disease, and in the vast majority of cases they will be the only ones present. They are of various sizes, but average that of a split pea. They are at first surrounded, in well-marked cases, with a red halo, which soon fades. They tend to increase slowly in size, and sometimes assume grotesque shapes. They are not fully distended, but flaccid, and not infrequently upon the hands will bear a strong resemblance to a burn of the second degree. If the covers of the vesicles or small bullæ are not disturbed, their contents in a few days will dry up, and the vesico-pustule will change into a straw-yellow granular crust, which is placed superficially upon the skin with its edge somewhat detached, and it may be, turned up. In fact, it looks "stuck on." When the crust is removed or falls of itself, there is exposed an erythematous spot, which in a short time will disappear and leave no trace of its existence. If the vesicles are torn by scratching, or if by any other means their covers are removed, we shall find very superficial losses of substance—a moist surface covered with a slight purulent secretion. Even this disappears and leaves no trace, passing through the erythematous stage in its course to recovery. Such are the appearances presented in the majority of cases.

Besides this usual and typical form we meet with another and

rarer variety, in which, instead of vesico-pustules, there are large bullæ. These are sometimes several inches in their long diameter, of irregular oval shape, not fully distended with fluid, and sometimes showing a slight depression in their centres. Their contents are at first serous, but soon become sero-purulent. They seem to be longer preserved than the vesicles, but otherwise run the same course. At first they have a slight zone of redness about them, but this soon disappears. They either are formed by two or more vesico-pustules running together, or spring up of themselves. They may attain their full size at once, or increase slowly. Rarely do they exist alone; generally the typical vesico-pustules will be found in their neighbourhood or elsewhere on the body. It is this bullous form that is liable to be mistaken for pemphigus.

Impetigo contagiosa is located principally upon the face, most often on the chin, and on the hands; it may also occur upon the scalp, legs, and trunk, especially in infants. According to my experience, the bullous form is most often seen upon the trunk. The lesions of both varieties are discrete; exceptionally two or more may run together. They are superficial, rarely very numerous, and tend to break out in crops. The bullous lesions are generally widely separated from one another. The outbreak of the disease may be preceded or accompanied by slight fever or some constitutional disturbance.

The disease is comparatively rare, or at least it seldom comes under the notice of the dermatologist. Thus the statistics of the American Dermatological Association for 1886 show but 91 cases in 14,984. During the last two years I have met with it only 16 times in about 2,200 dispensary and hospital cases. It is, as its name indicates, very contagious, and often occurs in epidemics. It is readily inoculable both on the subject of the disease and on others. Not infrequently we see a mother or other attendent of a child with the characteristic lesions of impetigo contagiosa upon the arms, derived from carrying the child suffering with the same disorder. We know that all pus is under certain circumstances inoculable, and hence it has been maintained that there is no such disease, properly speaking, as contagious impetigo. But when we succeed in inoculating from an ordinary impetigo pustule, we produce an ordinary impetigo pustule, not the characteristic vesico-pustule of impetigo contagiosa. It is more frequent in the warm months than in the cold. Children furnish the vast majority of the cases. My oldest patient was ten years of age, though I have seen the disease in adults from contact with children under their care. The duration of the disease is short, rarely more than a few weeks. Two months is the longest duration I have met with before the child was presented for treatment.

It is sometimes preceded by slight constitutional disturbances, and accompanied by a slight amount of itching. It must be

differentiated from simple impetigo, pustular eczema, varicella, scabies, pemphigus, and possibly ecthyma.

The diagnosis from pemphigus is the most important one to be made. Nor is the distinction between the two diseases by any means always easy. The occurrence of the bullous form of contagious impetigo is so rare that it is no wonder it is mistaken for pemphigus. Indeed, it is probable that not a few of the cases reported as acute pemphigus in children, which possessed apparent contagious qualities, were instances of this bullous form of impetigo. I have had opportunity to observe but four well-developed cases of the bullous form of this disease. In these cases the upper part of the chest and the neck were chiefly affected; the subjects were all infants; and a focus of contagion was ready at hand in the person of a fourth infant, who had well-marked impetigo contagiosa. The fourth case I saw recently at the Roosevelt Hospital. In this case the trunk of the infant had some half a dozen bullæ upon it, and the diagnosis would have been difficult if it were not that an older sister and brother presented symptoms characteristic of impetigo contagiosa. The diagnosis between the two diseases can scarcely be made with certainty by the appearances of the bullæ alone; we must also take into consideration the general course of the disease. The differential diagnosis may be given as follows:—

Pemphigus.	*Impetigo Contagiosa.* (Bullous form.)
1. Occurs chiefly in adults.	1. Occurs chiefly in children.
2. No source of contagion can be found.	2. A source of contagion can usually be found.
3. No particular sites of preference; if anything, it is most frequent on the extremities.	3. Met with most often upon the trunk; sometimes it may occur on the face, hands, or extremities.
4. Chronic in its course; marked by frequent relapses; may return from year to year.	4. Acute in its course, rarely lasting more than a few weeks.
5. Bullæ are fully distended with a clear fluid, so that there covers appear tense. They often spring up out of the sound skin without areola.	5. Bullæ not fully distended, but flaccid, and contain sero-purulent fluid. They have a well-marked red halo while slowly attaining their full size. Characteristic vesico-pustules are generally present elsewhere at the same time.
6. Lesions often occur in great numbers, so as to cover the whole body, and at times are pruriginous.	6. Lesions, few in number, do not involve the whole body, and itch but little, if at all.
7. Disease obstinate to treatment, and prognosis usually grave.	7. Disease yields readily to treatment; prognosis uniformly good

Ecthyma should not be mistaken for impetigo contagiosa. It occurs in broken-down subjects, affects by preference the lower extremities, is seen most often in adults, and its lesions are deep pustules, which are highly inflammatory and painful. It is non-contagious, and inoculable with difficulty. These symptoms will sufficiently distinguish the two diseases.

The prognosis of impetigo contagiosa is always good; so readily is it cured that the patients seldom present themselves a third time.

The treatment of the usual form is to direct the affected parts to be scrubbed with warm water and soap, and covered with a 5-per-cent. carbolized vaseline, or with oxide-of-zinc ointment with carbolic acid in the same strength. If there is a good deal of crusting, the crusts may readily be removed by soaking them with oil or hot water, after which the applications mentioned may be made, or a very mild mercurial ointment used. In the bullous form it is well to prick the bullæ at their most dependent part, and let the fluid escape, after which the lesions may be treated as just indicated.—*New York Medical Journal, Nov.* 19, 1887, *p.* 564.

70.—ON DERMATITIS HERPETIFORMIS.

By Louis A. Duhring, M.D., Professor of Skin Diseases in the University of Pennsylvania.

The typical form is seen in the production of vesicles, blebs, and pustules, occurring either together, simultaneously, constituting a mixed eruption, or at different times, as more or less distinctly defined vesicular, bullous, or pustular eruptions. The commonest, most frequent expression is the mixed eruption, the vesicular element predominating. As good examples of this form I would refer to the two cases reported in the New York Medical Journal of April 9, 1887; to the cases of Mrs. N. P. (Medical News, June 2, 1883) and H. H. McK. (New York Medical Journal, November 15, 1884). in all of which vesicles, blebs, and pustules, were usually present simultaneously, the vesicular manifestation, however, prevailing. These cases represent the so-called herpes gestationis of Milton, Bulkley, and others, while similar cases have been from time to time reported with various other titles.

The question may be asked, Do clearly defined characters exist whereby the affection may be distinguished from other diseases? Do the symptoms represent a distinct affection, or are they merely unusual forms of certain well-known affections; as, for example, of erythema multiforme, or of pemphigus? Are we in possession of sufficient facts and observations with which to build the structure we designate a disease? The latter question may, I think, be answered in the affirmative. To inquire into the matter, it may be stated that not only do well-defined elementary lesions of different kinds exist, but that certain manifestly abortive

lesions also play a conspicuous rôle. To illustrate my meaning of the latter form of lesion, I would cite the ill-developed papules and papulo-vesicles encountered not infrequently in herpes zoster. In addition to the primary manifestations, secondary forms of eruption exist, which in chronic cases may constitute a marked feature. In examples where the erythematous efflorescence prevails, the lesions are ill-defined, more or less circinate small or large patches or areas of inflammation, upon which ill-defined, erythemato-vesicular or flat, or outspread vesicular, or *quasi*-vesicular lesions arise, occasioning what has been described by some writers as "vesicating erythema." A similar, if not identical condition, is sometimes noticed in the more advanced stages of erythema multiforme.

As to the form and size of the other lesions, the greatest diversity exists. At times the vesicles are minute, pin-head in size, in which case they are usually very numerous; at other times they are much larger, and generally vary greatly in size. They incline to be irregular, angular or stellate in outline, and may have a rounded or ovoidal form, and they moreover tend to flatten and to spread out rather than to become elevated. This latter fact accounts for the smaller vesicles being not infrequently difficult to discern; oblique light, it will be found, will usually show them most plainly. As a rule, they are tensely distended, and consequently have a glistening, pearly appearance. In short, they are herpetic. They occur in ill-defined, irregularly shaped and sized areas or patches, or they may be aggregated or more or less distinctly grouped. The same general features are common to the blebs. The pustules, as in the case of the vesicles, are either minute and numerous, occurring as a miliary eruption, or they are pea-sized or larger, in which case they are sparse. The miliary lesions are peculiar; they are flat, are yellowish or whitish, occur in irregular or circinate patches, and at times give the surface a punctate or studded appearance. They are generally discrete. The larger, pea-sized pustules, are usually surrounded with inflammatory, flat or slightly raised, angry-looking bases, and have a somewhat drawn-up or puckered look, as is noted in isolated lesions of herpes zoster.

The papules (when they chance to occur) are usually large, the size of small split-peas, and are ill-defined manifestations, but have a distinctly herpetic look about them, and resemble somewhat the papule of abortive herpes zoster. Concerning the secondary lesions, it may be stated that pigmentation of a dirty-yellowish or brownish hue, and variegated, in chronic cases is generally a marked feature—much more so than in eczema of a like variety and grade. Crusting cannot be regarded as a conspicuous feature, but excoriations from scratching, together with considerable thickening of the skin, usually exist.

The varied combinations, as has been already stated, constitute a conspicuous peculiarity of the disease. In no other cutaneous affection are such singular combinations encountered; for example, erythema, vesicles, blebs; vesicles and blebs; vesicles, blebs, and pustules; or vesicles and pustules; existing frequently side by side in close proximity, accompanied with more or less pigmentation, excoriation, and other secondary changes. Mention may here be made of the subjective symptoms. Itching and burning, especially the former, are usually present in a marked degree. They are generally most distressing symptoms, coming on with each exacerbation or new attack of eruption. The desire to scratch cannot be resisted, and the act is indulged in until the lesions are lacerated, when some relief is obtained. Itching is most severe in the vesicular variety. In the pustular variety the subjective symptoms are generally milder, or may be altogether wanting for a longer or shorter period.

As a rule, it pursues a remarkably chronic course, extending over a period of years, and this too in spite of both local and internal treatment, which in many cases seems unavailing.

Another characteristic may be mentioned, that of the eruption appearing in the form of more or less distinctly defined attacks, or crops, each lasting from two to six weeks, followed by a respite, more or less complete, of weeks or months. Recurrences at variable periods, usually short, are the rule. Another singular feature in the evolution of the disease is that no definite order is followed in the manifestation of the several varieties of the affection. Thus, in a given case the first efflorescence may be vesicular and bullous, the next pustular, while at a late date vesicles, blebs and pustules may appear together, and such variations may occur *ad infinitum*.

The order is emphatically variable, and this is such a common feature in the evolution of the process that it must be regarded as being characteristic. It may be urged by some observers that a similar course is sometimes noted in eczema of long duration, but the variations here from one kind of lesion to another are seldom, if ever, so rapid and so sharply defined as in the affection under consideration.

Concerning the evolution and involution of the individual lesions, it may be said that they differ from those of other similar diseases. They break out, as a rule, with considerable rapidity, a few days or a week generally being long enough to bring forth a fully developed crop. New lesions may continue to appear for another week or two, when the decline of the eruption, as a whole, usually begins, the earlier lesions having in the meantime largely disappeared. The decline having once set in usually proceeds rapidly.

It will be inferred from what has been said, that the disease is a severe one, and such is the case. Apart from the chronicity and obstinacy of the process, the attacks are generally most distressing,

not only on account of the persistency of such a disagreeable form of eruption, but of the intolerable itching and burning. Such sufferers, moreover, may be confined to bed for periods of weeks or months; nor can they foretell what their condition may be from month to month. The presence or absence of systemic disturbance, characterised by malaria, chilliness and fever, will depend largely upon the gravity of the case, and upon the nature of the cause at work. For example, in the parturient state such general symptoms may be present in a marked degree. On the other hand, in simpler cases, depending upon different causes, as, for instance, nervous depression or shock, they may be slight or even wanting. When present they are especially noticeable with each exacerbation.

In arriving at the diagnosis, the history, course, distribution, and evolution of the lesions, their varied combination and peculiarities, together with the subjective symptoms, are all to be taken into consideration. While the diagnosis in most instances is readily made by an ordinary examination, cases occur where further observation is demanded. The evolution of the process must always prove an important point, and must in all cases be kept in mind.—*American Journal of Med. Sciences, Feb.* 1888, *p.* 136.

71.—A DESCRIPTION OF SEBORRHŒA CORPORIS.

By H. G. Brooke, M.B. Lond., Physician to the Manchester and Salford Hospital for Diseases of the Skin.

The most typical expression is the appearance of small red macules and papules covered with scales of a more or less greasy character. These papules expand, by agglomeration and by individual expansion, into patches and circles. By coalescence, gyrate figures or lines made up of arcs of circles are formed. The edges of the curves may show some papules; but more frequently the papular element is lost, and the growing border presents a continuous, slightly raised flattened ridge of varying breadth. The colour is usually of a salmon tinge, pinkish, dull red, or even in old cases brownish yellow, but on the extreme outer edge there is often to be found a clear red line, which when present is most characteristic. The area over which the advancing edge has passed shows signs of the inflammatory action, some pigmentation, and more or less desquamation. The most clearly marked lesions are formed on the typical regions mentioned above, over the sternum and between the scapulæ. In the former position, particularly in cases of old standing, the eruption presents itself in the shape of horse-shoes (varying from the size of a pea to that of a halfpenny) or large conjoint sections of small circles, covered with a crust of dark yellow grease and epidermic scales, and having a very sharp cut edge. In the acute cases these regions may not be particularly affected, or if the lesions are present there they may present nothing

to distinguish them from those on the rest of the trunk. On the arms and legs the eruptions occur, perhaps, more frequently as nummules than in circinate forms. They affect by preference the flexor surfaces, but are by no means rare on the extensor sides; they have, however, no preference for the knees and elbows. On the hands and feet the lesions attack almost exclusively the dorsum and backs of the digits, yet they are occasionally found, as small exfoliating spots, even on the palms and soles. The scalp is almost invariably involved. I have, however, seen some cases in which the disease was well marked on the body whilst the scalp (which had not in any of the cases been recently washed) was perfectly free. The form which the disease assumes in this region is various; sometimes it is a loose conglomeration of fat and epidermic scales (the flat epidermic scales of the scalp surface), of varying thickness, covering the whole or only part of the head; at others it takes on the form of patches of hard dry exudation of a yellowish or brownish or even blackish colour; at others again it is dry and scaly (pityriasis). In the acuter forms it may accumulate so as to build up a dense mass of greasy epidermic débris of as much as a quarter of an inch in thickness, the skin presenting a sodden appearance when this covering is removed, and having a great tendency to bleed. The general absence of erythema in these cases, and the dull white or even slightly leaden colour which the scalp skin assumes, has often been recorded, and is in marked contrast to the red hue which is taken on by the neighbouring skin when it becomes affected by extension. The association of partial or total baldness with this affection is also well recognised; it is due apparently to the spreading of the process down to the hair follicles and sebaceous ducts, with consequent suspension and even final destruction of their functions. When the disease passes out from among the hairs on to the forehead it develops a more or less complete scalloped red fringe covered with greasy scales, and confined, for the most part, to the immediate neighbourhood of the hair. This efflorescence has been so long known as seborrhœa, and so clearly distinguished from the eruptions of psoriasis and syphilis in the same region, to which it offers a certain resemblance, that it is strange that its identification with the similar lesions on the trunk should have been only so recently made. Passing downwards, the eyebrows furnish a favourite site for its development, and also, though much less frequently, the eyelids and lashes. The ears are liable to be attacked, and often acutely. On the face the eruption is less definite in outline, and resembles the papules and greasy patches seen in rosacea, with which, both in men and women, it is often closely connected.

Another and very important manifestation which is found in connection with seborrhœa is acute eczema. A very good example of this complication is often seen in the eczema of the scalp of

infants, where the simultaneous presence of the hard greasy cakes on the scalp with acute oozing is very striking. In this form of the disease, the tendency of the eczema, both in infants and adults, is to extend downwards on to the forehead and ears, and even to quite remote parts. An acutely eczematous condition of the neck is sometimes found, aggravated apparently by the constant rubbing of the clothing; and in the armpits and the genito-crural region where the skin is, like that behind the ears, thin, delicate, and prone to eczematous eruptions. Rarely a vesicular eczema of the same nature develops on the hands; but it is possible for any of the lesions to become more or less acutely eczematous. In my experience the access of acute conditions of eczema, even in acute cases of almost universal seborrhœa, is not of frequent occurrence.—*Medical Chronicle, March*, 1888, *p.* 489.

72.—NOTES ON THE USE OF MEDICATED RUBBER PLASTERS IN CERTAIN CUTANEOUS DISEASES.

By Henry W. Stelwagon, M.D., Physician to the Philadelphia Dispensary for Skin Diseases.

During the past few years the subject of fixed dressings in the treatment of skin diseases has received considerable attention, and as a result, important therapeutic advances have been made. To-day the gelatin, collodion, gutta-percha solution, and similar dressings are widely employed and in some instances seem indispensable. Unna's plasters belong among this class of applications, and are excellently made and efficient, but unfortunately are in this country expensive and difficult to obtain.

About a year ago the idea of incorporating medicaments in the well-known rubber plaster suggested itself, and at my solicitation, the manufacturers, Seabury and Johnson, kindly made a number of plasters—containing pyrogallic acid, salicylic acid, chrysarobin, ammoniated mercury, and oxide of zinc. They were remarkably adhesive, and when once applied would remain several days or even weeks. At the time the plasters were sent me, duplicates were forwarded, so I have been informed, to several other gentlemen interested in dermatological practice, of whom one or two have already reported on their use. While these plasters are an addition to our means of treating special cases, it must be admitted that as at present manufactured their use is somewhat limited. They are not adapted for acute and subacute cases. In this respect they are inferior to Unna's plasters referred to. The manufacturers show every disposition to perfect them, and doubtless in a short time these plasters will be found all that is desired. Their special field, according to my experience, is chiefly in the treatment of chronic, sluggish cases of eczema, in the larger patches of psoriasis, in ringworm of the scalp, in callosities, and in lupus and epithelioma. In

these diseases, so far as my observations have gone, the sample plasters sent me have been of positive value.

In several cases of chronic papular and scaly eczema, in which the disease was limited to one or two palm-sized patches, a plaster containing twenty per cent, of ammoniated mercury was employed; the results were satisfactory. A single plaster would remain on for one or two weeks without loosening, a renewal being made about every ten days. The parts became gradually paler and the infiltration disappeared.

In psoriasis, in the large thickened chronic patches, chrysarobin plaster acts admirably. The scales are first removed by washing, the plaster cut to fit the patches and applied. As a rule, it remains adherent a week, and should then be removed, the parts washed, and a fresh plaster applied. In the several cases of this disease in which it was employed, the objectionable properties of the remedy as ordinarily used, were not observed. In a few instances a single application of the plaster was sufficient to promote the disappearance of the diseased area, but in others a second and even third application became necessary. In those cases in which the disease is more or less general, and the spots small, the plaster treatment is not practicable; but in those instances where the disease persists in several large, inveterate patches it proves particularly useful. Chrysarobin plaster is serviceable, also, in ringworm. In three cases of ringworm of the scalp, in which the affection existed as two or three well-defined areas, the plaster was used with favourable results. The hair on and surrounding the diseased patch was removed by shaving, and the plaster applied. A renewal was made every week or ten days, the diseased stumps coming away with the old plaster. After six to eight weeks' treatment the disease seemed at an end, and the applications were discontinued; several months later, in two of the cases at least there had been no return, the third case failing to report.

A plaster of salicylic acid, ten to twenty per cent. was found of advantage in callosities. In one case in which both soles were involved to a marked degree, the condition was removed in a few weeks. The plaster remained adherent for a week without renewal. In certain cases of lupus the advantages of a fixed dressing are evident. In two suitable cases a pyrogallic acid plaster, twenty per cent., was applied, a renewal being made every third or fourth day. The result in these instances was equal to that obtained from the use of a pyrogallic acid ointment, without the additional trouble and uncleanliness of the salve applications.

The same may be said of the use of this plaster in the treatment of certain cases of epithelioma. In this disease, as well as in lupus, where the action of the remedy is necessarily destructive, the plaster must be renewed at frequent intervals.

Without additional comment, the advantages of these plasters

may be briefly expressed in the words cleanliness, simplicity, and saving of time and trouble. As already intimated, while their field of usefulness is at present somewhat restricted, it may be expected that as the various plasters are finally perfected and made to meet the requirements, their therapeutic application will be considerably broadened.—*Medical News, Oct.* 8, 1887, *p.* 421.

73.—ON THE TOXIC EFFECTS OF IODOFORM.

By R. W. Taylor, M.D., Surgeon, Charity Hospital, New York.

The nature of the skin lesions due to this agent may be concisely stated under the head of dermatitis; but they may, for the sake of accuracy, be further subdivided as follows, according to their relative frequency: First, erythema; second, eczema; and third, purpuric spots.

The erythemata due to iodoform present many of the features of similar simple eruptions, and to those due to other drugs. Their mode of invasion is prompt, and their extension rapid. They may increase from an original focus of contact with the drug, and extend over parts of or over the whole body, or they may also thus begin and be met with patches which have developed in parts remote from the point of invasion. Then, again, a more or less general erythematous rash may follow the simple act of smelling the agent, without any contact whatever. Reaching their full evolution in one or several days, they, under favourable circumstances, rapidly undergo involution, behaving much like the ordinary erythemata, except that their course is usually even more rapid.

The eczema caused by iodoform is usually of severe form and of rapid evolution. It may begin at the point of contact with the drug, or it may develop in parts far distant, or again appear in one or in several spots—such as the hands, face, and trunk—simply from smelling of the drug. Its character is pronounced from the first; much surface is rapidly involved; the erythema and infiltration go promptly on to vesiculation and the formation of a well-marked weeping surface, in all respects similar to the ordinary eczema madidans. In most cases the involution is almost as rapid as the evolution, provided the toxic agent is removed. But in some instances, perhaps of debility of marked eczematous tendency, or of excessive idiosyncrasy, the affection shows a tendency to become chronic. It is usually very amenable to treatment. My statistics show that eczema occurred nine times in twenty-four cases, being a ratio of forty-three in a hundred.

I am unable from my own observation to say anything as to the occurrence of purpuric spots as a result of iodoform intoxication. Janowsky reports such a case, in which the spots appeared on the third day, strange to say, without any co-existent systemic

symptoms. Further observation is necessary upon this branch of the subject.

The date of appearance of these iodoform exanthems is interesting. In twelve cases the rash began within a few hours on the first day, in three on the second, three on the third, one on the ninth, one on the tenth, one on the twelfth, and in two on the fourteenth day. In one half of them, therefore, we find that the toxic action began very early. This is in marked contrast with the statistics of the cases of systemic poisoning, in the majority of which the morbid symptoms began in the second week. As a rule, it may be stated that, in proportion as the rash is slow in appearing, so are the concomitant symptoms severe. The cases reported seem to warrant the belief that the earlier the date of evolution of the rash, the more general and exanthematic it is.

The age of those patients showing a tendency to this form of toxic action of iodoform is noteworthy. Three patients had not yet reached puberty, eleven were between twenty and thirty, seven were between thirty and forty, and one was sixty-one years of age. The statistics seem to show that this form of intoxication is most frequent in youth and middle age, in contrast with the severe forms, which occur more often in the aged.

The concomitant symptoms present much variation, since in nine cases they were absent, were mild in eight, and severe in five cases, in one of which death occurred.

I am in accord with Cutler, who adopts Nussbaum's division of the symptoms of iodoform poisoning, making three degrees. The first is comparatively mild. A loss of appetite, headache, disturbance of disposition by excitation or depression, a mild delirium or loss of memory, and sleeplessness may be observed. In the second degree there are absolute anorexia, an intensification of the head symptoms, perhaps dementia, mania, or melancholy, weak and rapid pulse, mild fever, and emaciation. The third degree is a continuation and intensification of the second. Such patients lie perfectly abject in sopor, with a rapid, thready pulse and a cold surface, and die in collapse. The systemic symptoms in the majority of cases of iodoform exanthems belong to the first and second degree. In but one case did they go on to the third degree and end in death.

The origin of these exanthems in the toxic action of iodoform being beyond dispute, the interesting question suggests itself, In what way does the drug act? Certain of the cases show that at a given spot irritation of a high grade began, and from that form extended until much surface was involved in acute inflammation. The morbid process is, therefore, what is termed "contagion by continuity," in which healthy areas around a morbid one become affected. It is simply a local inflammatory process. This form of iodoform rash, itself an eczema, has its analogue in the eczema caused by mercurial ointment.

The diffused erythematous rashes of iodoform and the eczematous form developing at several different sites can hardly be accounted for in this manner. Their history shows, as a rule, that there is more or less systemic reaction, and that they are probably angeio-neuritic in origin. They have their analogues in the quinine and antipyrine exanthems. The same origin undoubtedly exists in the cases in which the mere smelling of the drug gives rise to severe local and general symptoms.

The practical lessons taught by the collective knowledge of the nature and action of iodoform should be well remembered, and may be concisely stated as follows:

A. Its use is indicated: 1. On fresh wounds. 2. On diseased surfaces—gangrenous, chancroidal, phagedenic, syphilitic, tuberculous—and on those slow to take on healthy granulation. 3. On the surface of necrosed bone.

B. Its use is contra-indicated: 1. On freshly cut bone. 2. On granulating surfaces. 3. In cases in which it is known or is found to produce toxic effects.

C. Modes of use: 1. It should be dusted on the surface lightly and sparingly. 2. In wound-cavities or in the natural cavities as small a quantity as possible should be employed; in the former it is preferable to use it in the form of gauze. 3. It should never be rubbed in with the finger. 4. Its application should be renewed as infrequently as possible. 5. Such aids to absorption as tightly fitting bandages and impermeable dressings should not be used. 6. Its use should be discontinued as soon as healthy granulations appear. 7. It should not be used coincidently with any other antiseptics, carbolic acid especially (Mosetig-Moorhof). 8. It should be used with great caution in the young and the old, in anæmic and neurotic persons, and those suffering from weak heart or Bright's disease; also in very fat and flabby subjects. 9. Should toxic symptoms appear, the iodoform dressing must be promptly and thoroughly removed.

D. The occurrence of anomalous forms of persistent or recurrent eczema in persons who handle or in any way come in contact with the drug, or who use it as an ointment or in suppositories in the vagina or rectum, should cause the physician to suspect the agent as the possible cause.

E. It is most important that the practitioner should exercise a watchful care over all patients for whom he prescribes this agent, and should he observe morbid symptoms, however mild, pointing to the brain, heart, or lungs, or a tendency to loss of appetite or emaciation, he should cause the discontinuance of its use at once.

F. The treatment of the skin manifestations is similar in all respects to that of the simple eruptions of the same varieties. Systemic poisoning should be treated symptomatically, since we have no specific.—*New York Med. Journal, Oct.* 1, 1887, *p.* 370.

SYPHILITIC AFFECTIONS.

74.—ON THE ABORTIVE TREATMENT OF SYPHILIS.

By Jonathan Hutchinson, F.R.S.

For many years past I have been in the habit of assuring patients who came to me with indurated chancres but without any other symptoms, that they would in all probability wholly escape the secondary stage. As years have gone on I have found myself holding out this hope with increasing confidence. My treatment has been almost uniform, and has consisted in giving mercury in the form of grey powder in one-grain dozes three times a day, at least, and more frequently if the symptoms did not quickly yield. I have always told the patient that he must take these pills for six months at least. The results have also been very uniform, or have varied chiefly according to the period of the disease at which the treatment was begun. The effect of the medicine in softening the induration is usually quite evident within a week, and may be expected to be complete in the course of a month or a little more. After this the patient remains without symptoms till the end of the course, except, perhaps, some slight persisting enlargement of the inguinal glands. At the end of the six months, if the treatment is left off, there not very infrequently follows in three weeks or a month an erythematous general eruption. This eruption is never severe, never becomes papular or scaly, and always vanishes in a few days if the mercury is resumed. It is never attended by failure of health, and but rarely by sore throat. On account of its frequency after six months' courses, I have lately been in the habit of continuing the treatment for nine or twelve months, and am willing to admit that it might be wise to continue it for still longer periods. As regards relapses at still longer periods, I must state that, in a certain proportion of cases, sores in the mouth or scaly patches in the palms, or a liability to transitory erythemata on the skin have occurred, but they have generally been in connection with some special kind of irritation.

The statement which I wish to make quite clear is this: that I believe that it is quite possible, by the early and continuous use of mercury, to suppress the secondary stage—in other words, to make it abortive. In exceedingly few cases where it has been possible to use mercury without interruption in this way have I known a well characterised secondary eruption or a typical sore throat to occur. In cases where diarrhœa or sudden ptyalism have caused the course to be interrupted, the success has been less complete; but where the patient is careful, and can bear the drug, I may repeat that I believe that it is easily possible to prevent secondary symptoms. This assertion is not by any means the same as saying that it is possible to cure syphilis, for it does not

concern itself with the tertiary stage. It is desirable, I think, in order that we should arrive at sound conclusions, that we should take our problem in parts. In making the proposition which I desire to submit to you this evening, that mercury is a specific antidote for the syphilitic virus, and that by its use the disease may be made abortive, I will divide my argument into several parts.

The first statement shall be one with which all will agree. It is this: that in cases in which induration is well characterised and considerable, it always yields quickly and definitely to the influence of mercury. The very rare apparent exceptions to this which we witness occur to those who in a peculiar manner resist the influence of mercury. We never see sores remain typically hard when the patient is under the influence of mercury.

The next is that in cases in which high temperatures have been observed in syphilis they always abate under influence of mercury.

Thirdly, I believe that all will agree that when a patient receives no treatment until his eruption is well out, the use of mercury will usually in the most definite manner cause the eruption to disappear. There is but little less certainty about this than there is to the disappearance of induration in the sore, and the exceptions occur only when the treatment disagrees, and has to be interrupted.

If these several propositions be true, if mercury always causes induration when present to soften down, fever when present to subside, and an eruption when present to disappear, I cannot think that any will see much improbability in the assertion that if used before the fever, rash, etc., have shown themselves, and steadily continued, it will prevent their development. It would be extraordinary if these symptoms should develop *de novo* under the very conditions which all but invariably secure their removal when extant.

Those who object to the statement that mercury is an antidote to syphilis, and decline to employ such terms as "specific," "abortive treatment," and the like, do so because, as they allege with truth, it can seldom or never be asserted that the disease has been wholly or, at any rate, permanently cured. This is, however, I cannot but think, putting a too strong meaning on the words. It may easily be the fact that we have not yet hit upon the best method of using the remedy so as to secure permanent results. It is not fair to demand of a "specific" that it shall always prove its efficacy without regard to differences in the mode in which it is employed. A remedy may be fairly called "specific" if it always and invariably manifests its power over the phenomena of a disease. It is for the prescriber to find out how so to use his specific as to bring about an actual cure. As regards the term "abortive treatment," its appropriateness may surely be justified in any case in which it is designed to cut short the development of a

malady and prevent the evolution of its natural stages. We must not strain the word to make it mean absolute annihilation of the thing concerned. If a scheme of treatment of syphilis, begun in the primary stage, is planned to prevent the secondary phenomena, and usually does so, it may, I think be fairly styled "abortive" in contradistinction with others which make no pretence to prevent the ordinary evolution of the malady. Abortion, as regards preventing tertiary symptoms, is, as I shall endeavour to show immediately, another matter. It is possible that in our present modes of use of mercury we neither begin early enough nor continue long enough to secure that result.

The term antidote, when used in reference to mercury as against syphilis, must be sustained by resort to more hypothetical reasoning as to the nature of the disease. In the year 1860, in a paper read before the Hunterian Society, I first ventured to claim a place for syphilis amongst the exanthemata, and argued that in its phenomena as regards stages, period of incubation, and other points, it resembled the diseases which we attribute to specific animal poisons. Amongst those who took part in the debate on my paper were Mr. Acton, Mr. De Méric, and others who at that time were the leading authorities on the subject. Some years later I read before the same Society another paper, claiming for mercury, on much the same grounds that I have this evening advanced, the position of a specific. My views were on each occasion warmly opposed, but I believe that the progress of investigation since then has done much to facilitate their acceptance. For myself, I may say that I have always, in speculating about the cause and evolution of syphilis, held firmly to the belief that it is due to a specific particulate virus, just as small-pox is, or in the language of to-day, to a living microbe. Other observers, with most praiseworthy zeal and industry, have occupied themselves with the endeavour to bring this microbe to actual demonstration, nor have I the slightest doubt that their search will some day be crowned with success. In the meantime, if we would understand the disease we must, I think, take its existence as granted. It is in reference to this as yet hypothetical microbe, that we justify the assertion that mercury is an antidote; we know how powerful that drug is in preventing the development of plant life, and that which we know fits well with what we observe of its efficacy and its failures in the treatment of syphilis. It is antidotal to the virus, and so long as present it prevents its manifestations of activity. In some cases, but by no means in the majority, it probably kills it outright. The more usual result is a repression of vital activity in the virus, which lasts as long as the drug is used. This repression, if continued for long periods, would appear to amount to a very important modification of power, for I believe that if the secondary phenomena be kept in abeyance for many months, their subsequent

development, if then permitted, will never be severe. If continued long enough it will wholly prevent the secondary stage, and yet I fear it is true that even in these the patient may be liable to tertiary affections.

If it be rejoined that no remedy can claim to be antidotal or specific respecting which it is admitted that it does not prevent tertiary sequelæ, a reply is yet possible. There is a sense in which, without any hair-splitting, tertiary symptoms may be said not to be syphilis at all. There is neither proof nor probability that the microbe or virus is present in their lesions. They do not develop symmetrically, and they are not contagious; they are due to processes of inflammation occurring in tissues which have formerly been under the influence of syphilis, and have been modified by it. If this be their true position, it will easily be seen that no antidotal treatment directed to the killing of the microbe can prevent them, unless it is commenced before the system has been contaminated. If we wait till the sore is well developed, the patient feverish, and the eruption on the eve of appearance, we have waited until the patient has had syphilis through him, and though we may then proceed to cure the disease by killing the poison, it is too late to prevent its remote effects. In saying this, do not let me be understood to say that the use of mercury late makes no difference as to proclivity to tertiary symptoms. On the contrary I believe, although it is impossible to prove it, that it does make them both less common and of milder type.

The practical questions which come, then, before the surgeon are these—In what manner and at what stage ought mercury to be given so as best to secure its antidotal efficacy?

The verdict that mercury given in short courses is not preventive of the development of syphilis has been recorded in unmistakable terms by the surgeons of the past generation. Mr. Judd, indeed, whose reports are full of interest, and contain proof alike of ability and of candour, thought that such courses favoured the absorption of the virus, and made the disease eventually more severe. His courses were, however, of a fortnight, a month, or six weeks at the most, and were always attended by free ptyalism. The modern introduction of the small-dose system, with the avoidance of ptyalism, makes it necessary that we should investigate the whole question anew. I do not suppose that there is much difference, as to the special preparation of mercury which is employed, though it will not do to take this for granted. Some of the records of M. Diday as to his failures to prevent symptoms would add to the suspicion that the iodide of mercury, as employed by him, is less efficient than the mercury only, in the form of grey powder. The great point is that a preparation should be used which can be pushed without producing symptoms which necessitate its temporary discontinuance. Its efficacy may be taken as proved by the prompt

disappearance of the primary induration. The dose which is efficient to this result will, if steadily persevered with, probably be efficient in preventing the development of other symptoms.

The question arises, I think, naturally, at this point of our inquiry as to whether it may not be advisable in the future to attempt the abortion of the primary stage itself. I am not aware that any large amount of evidence is in existence as to the possibility of preventing the development of induration in a chancre by using mercury before it occurs. Ever since the recognition of the fact that some chancres are not infecting, and that the phenomenon of induration is the most valuable one by which to diagnose the true or infective chancre, we have been in the habit of waiting till the character of the sore declares itself before beginning to use the specific. Many, indeed, especially those of the French school, have advocated waiting till constitutional symptoms in the form of eruption occur. Our forefathers, we well know, did not so wait. For them a venereal sore was a chancre, and they poured in mercury as soon as the patient presented himself, and often within a week or two of the contagion. It may have been that in many cases they succeeded in aborting syphilis as a whole, and in preventing alike the primary and secondary stages. It is to be feared, however, that their success was but too often prevented by the manner in which they prescribed the antidote. They were accustomed to give large doses during short periods, and were constantly obliged, by the occurrence of ptyalism, to interrupt the treatment. Indeed, as a rule, a short treatment was all that was contemplated, and the production of free ptyalism was regarded as essential. As I have already suggested mercury may sometimes, when given in this way, possibly prove an abortive treatment—that is, it may kill the virus. Facts, however, would seem rather to point to the conclusion that it only temporarily suspends its activity, and that in many cases a severe outbreak follows soon after its suspension. It is otherwise, I think, when small doses are long continued.

I wish to avoid giving any exaggerated impression of the extent and kind of evidence upon which my statements are based. It is not my intention to produce before you any statistical evidence, nor even to quote individual cases. To do so would be very easy, for I hold in my hand a large number of extracts from my note-books which bear upon the matter. To read them to you would however be very monotonous, and I think unprofitable. They are for the most part repetitions of the statement that the patient came under my care with a well-indurated chancre, that I advised a long course of small doses of mercury, that the induration melted away, and that nothing else ever followed. There is a weak point in many, but by no means in all, and it is this, that I have no record as to the patients beyond the first six months or so. My practice has for many years, in respect to primary syphilis, been solely in

private, and it is of course not practicable to compel patients to come and report after they believe themselves well. I feel sure, however, that this negation of evidence is in itself of considerable strength. For long, as I have said, I have been in the habit of holding out hopes of immunity, if the remedy were persevered with, and I assume that if my foretellings proved fallacious, I should in the majority of cases hear of it. On the contrary, so far as my own observation of primary syphilis has for many years past been concerned, I should certainly never have discovered that an eruption on the skin was a usual part of the malady. I have of course seen plenty of secondary eruptions in those who had not been under treatment, but in those whom I had myself prescribed for in the primary stage scarcely any. I could count on my fingers the number of cases in which during the last five years I have watched the patient from his primary sore through a well-marked syphilitic eruption on the skin. A few I have seen, probably because not sufficient mercury was given, and more in which some very slight and transitory eruption showed that the poison, though restrained, was struggling to show its powers. Of really troublesome eruptions, such as are common enough when mercury has not been used, I may say confidently that I have seen none.

I must admit that the gross total of cases of primary syphilis which have been under my care has not been so large as that which falls to the share of specialists, particularly to those holding hospital appointments. More patients come to me in the secondary, or later stages, than in the primary. Still, my experience has been considerable, and justifies, I think, the general statements which I have ventured to make to you this evening. It is to be clearly understood that I have been speaking only of cases in which the induration was characteristic, and in which an interval of from five to seven weeks had occurred since the exposure. I have never allowed myself to diagnose a sore as infectious, or to begin mercury, except under these conditions.

There is another class of cases which bear testimony which is, I think, very valuable as regards the antidotal efficacy of mercury. I allude to those in which the patient comes under care with his rash fully out, and having as yet had no treatment. The possibility of aborting the rest of the malady in these is less certain, yet I think we may generally expect it with much confidence. If such patients will take mercury their symptoms will disappear, and if they continue it there will be no relapses.

In conclusion, I may express my hope that it will have been clear to all that my object in this paper has not been to claim credit for any particular method of treatment, far less to make boast of personal success. My wish has been to draw attention to a clinical fact which, although hitherto much ignored, or even denied, must have been for long more or less under the cognisance of all engaged

in the treatment of syphilis according to modern rules. The fact to which I refer is that the early use of mercury does not only greatly shorten the duration of the primary phenomena, but that it also much modifies, and in many instances entirely prevents, those of the secondary one. I have indeed ventured to assert that, when circumstances favour, the febrile stage of the exanthem, syphilis may be rendered wholly abortive. If we can accept this proposition, I feel sure that we shall have gained a step in the orderliness of our future work, and in reference to this the following problems seem to lie before us.

What plan of treatment is most successful in suppressing the febrile or secondary stage?

Does the suppressing of this stage tend to prevent what are called reminders, or those minor, and for the most part local, symptoms which often intervene between the febrile stage and tertiary phenomena?

Are those in whom the febrile stage has been aborted by artificial means more or less than others liable to tertiary phenomena?

Is it possible by anticipatory treatment to prevent or abort the phenomena of the primary stage; and, if this be done, what is the influence upon the further course of the disease?

It has been well said that all men use syllogisms, whilst but few have studied logic; and in like manner I may remark that most of us have been practising more or less completely the abortive treatment of syphilis, though without giving it that name.—*British Med. Journal, Feb.* 25, 1888, *p.* 413.

75.—ON SPONTANEOUS GANGRENE OF THE SKIN IN THE LATER STAGES OF SYPHILIS.

By Hermann Klotz, M.D., Physician to the General Hospital and Dispensary of New York.

[This paper contains the narratives of two interesting cases, upon which the writer's observations are mainly based. The following are the main points in the cases in question:—*Case* 1.—Female, aged 58. From about the lower third of the leg to the middle of the dorsum of the foot, ulcers of irregular shape, at least one centimetre deep, with sharply cut indurated edges, occupied nearly the entire circumference of the ankle. The floor of the ulcers showed an uneven surface of a dirty green colour, furnishing a copious and offensive watery discharge. Eight years previously a tumour had formed over the sternum, which broke and left an extensive ulcer which finally healed. Soon after similar ulcers developed on the dorsal side of the right forearm, which also healed. A few weeks afterwards ulcers made their appearance on the back of the right foot, laying bare the bones, but gradually filling up again, never healing, but gradually attaining the condition above described.

Under specific treatment she improved up to a certain point, when blood poisoning set in, and she ultimately died. *Case* 2.—A female, aged 50, contracted syphilis in 1880. A year afterwards there were, amongst other manifestations, superficial ulcerations of the forehead and gummata of the thigh and anus. Since that time she has never been free from symptoms, consisting mostly of ulcers in different parts of the body. Later on there made their appearance below the malleolus internus two dark-green, firmly adherent sloughs, about the size of peach-stones; after four weeks the sloughs separated, but the ulcers have never entirely healed. (Valuable references to the literature of syphilitic gangrene and phagedæna are made in the course of the paper, but these we must omit.)]

Whenever we find an ulcer of round or oval shape, sharply cut as if punched out, with somewhat thickened abrupt edges, extending deeply into or through the entire thickness of the skin, with an uneven floor of a dark-green or yellow, dirty colour, in a person known to be under the influence of syphilis in its later stages, such an ulcer we generally consider to be a syphilitic one—that is to say, to owe its origin to necrosis of some previously formed specific tissue, most frequently to the breaking down of a gummatous infiltration. An observation made several years ago rendered it more than probable to me that similar ulcers in syphilitic persons might directly result from circumscribed spontaneous gangrene of the skin, due to syphilitic arteritis or endarteritis obliterans.

I had in case No. 1, a patient of whose syphilitic taint there could be no doubt, with ulcers closely resembling the typical so-called gummatous ulcer of syphilis; still I felt absolutely certain that in those localities where I had been able to watch their development there had been no symptoms of previous gummatous infiltration. There had been no reddening of the surface, no spontaneous opening of a single aperture nor ulceration at several distinct points, no formation of a small deep ulcer with a core underneath, and final extension until the entire neoplasm was destroyed; no thickened edges and no hyperæmic areola. The blackish-green eschars had appeared at once, uniformly covering the whole area; they were closely adherent at first to the surrounding skin, which itself did not exhibit any changes from its former condition; they gradually separated in their totality—clearly spontaneous gangrene of the skin. In looking for the cause of the gangrene, there was no evidence of trauma, none of the influence of heat or cold or of caustic or irritating chemical action, none of a diathesis like diabetes or of an infectious disease, none of neurotic influences, none of ergotism, or any other cause except obstruction to the circulation. The patient exhibited no signs of endocarditis, no sclerosis of the arteries in other parts where it usually manifests itself; therefore it seemed probable that syphilitic arteritis or endarteritis obliterans had led to the interruption of circulation. Still, I con-

fess the case was not entirely convincing, especially in regard to the right extremity, which was first affected. Here the whole leg was in such a condition that the obstruction of a blood-vessel could easily take place from various causes; not so, however, on the left leg, which had previously been in a normal state. Certainly my attention was sufficiently aroused to keep me on a sharp lookout for similar cases. Several years, however, passed without furnishing further confirmation of my suspicion. In several instances I have found the same dark-green sloughs, firmly adherent to their base and their periphery, occurring mostly at the malleolar region; sometimes I could watch the separation of these sloughs and the appearance of the deep, dirty, sharply cut ulcers, surrounded, at least at first, by rather normal skin, in persons known to be, or highly suspected of being, subjects of syphilis. At other times ulcers were seen, under similar conditions and in the same localities, which I felt convinced had been originated by the separation of the same escharotic sloughs. They were generally of oval shape, uneven, very often deeper at one side than at the other, showing a flat semilunar elevation like the round ulcer of the stomach, with hard but sometimes inverted edges, furnishing a thin watery secretion and either exhibiting very little tendency to extend or to heal, or, after a very slow progress of healing, leaving a depressed scar that firmly adhered to the underlying tissue, even when not situated directly over a bone. Per contra, gummatous ulcers as a rule show a great tendency to heal under proper treatment with a slightly depressed, movable, and thin parchment-like scar. Naturally, such ulcers at first sight do not differ much from the common chronic ulcer of the leg, especially if left to themselves for some time, but on close observation some peculiarities can indeed be found. I have observed these so regularly in ulcers of the malleolar region that I always consider those as suspicious of syphilis, and but exceptionally has the suspicion failed of confirmation by the absence of a history or other manifestations of syphilis.

I am well aware that it will require the anatomical proof that changes in an artery leading to a gangrenous portion of the skin must actually be shown to exist to establish as an irrefutable fact what I have maintained. This, I confess, I have not been able to do thus far, nor can I hope to find the opportunity in the future.

Conclusions.—I have to submit the following conclusions: 1. Ulcers resembling the so-called gummatous syphilitic ulcer may occasionally result from circumscribed spontaneous gangrene of the skin without the previous formation of a syphilitic neoplasm. 2. Such ulcers may be distinguished by several peculiarities in shape, formation of the floor, and course. 3. They are not at all or but very little affected by anti-syphilitic treatment. 4. The spontaneous gangrene in such cases is probably due to endarteritis obliterans.—*New York Medical Journal, Oct.* 8, 1887, *p.* 395.

AFFECTIONS OF THE EYE.

76.—ON THE "CURATIVE" TREATMENT OF OPHTHALMIA NEONATORUM.

By P. H. Mules, M.D., Surgeon to the Manchester Eye Hospital.

A perfect knowledge of the "curative" treatment of ophthalmia neonatorum is of primary importance; if carried out promptly and efficiently, corneal complications can scarcely arise. Once only, after a long experience, have I known ophthalmia neonatorum destroy vision by corneal ulceration, when the child was well nursed and under the care of a skilled ophthalmic surgeon from the commencement of the attack—this case has always been a mystery to me. I shall speak dogmatically of "Treatment," because we have tried every plan, and the one we now use is that suggested by Graefe, with certain modifications, the outcome of our own experience, and the belief that it is the best for those placed under our care.

The child is usually brought to the surgeon when the third or purulent stage is reached; it is rarely that we have the opportunity of trying to abort it during the second stage. Let me here suggest that if the case is a severe one, and the surgeon is not skilled in the treatment of eyes, he will act wisely by transferring it to a specialist as soon as possible. If then a child is brought to the surgeon with evident marks of ophthalmia neonatorum, every stage of the examination and treatment should be conducted with the utmost gentleness.

The mother or nurse should first wash the eyes in warm water to remove the secretion and free the lids. The surgeon should be seated in a convenient chair, with a folded towel across his knees, and with medical appliances within reach of his hand. These appliances are:—(1) A plentiful supply of pieces of clean rag; (2) solutions of argenti. nit. 5 gr. to 1 oz., and 10 gr. to 1 oz.; (3) vessel of clean water; (4) two camel-hair pencils to apply the solutions and wash the excess of fluid away; (5) a bottle of eserine, 5 gr. to 1 oz., and dropper; (6) lid elevators. He then receives the head between his knees, yet supported by the towel. The nurse tucking the child's legs under her left arm, supports the body on her raised knee, holds the child's hands with one hand, and has the other at liberty to assist the surgeon. The surgeon first proceeds to examine the condition of the cornea by gently raising the upper lid with his finger—if there is any difficulty in this manœuvre he uses an elevator. A bent hair pin often answers admirably. He next everts the lids, wipes them dry, paints them with the silver solution of the required strength, taking special care to get to the *back folds of the conjunctiva*, and washing off the excess of solution with clean water, carefully replaces the lids by

drawing them downwards and away from the globe. This process is repeated by the surgeon every morning until the disease is arrested, his object being to produce a slight eschar, which either destroys the micro-organisms or prevents their multiplication. The effect lasts about twelve hours. In severe cases the solution can be reapplied at night. However careful the surgeon may be his efforts are of little avail unless he is ably seconded by the nurse. Her duties are—to prevent the re-collection of pus, by constantly opening the lids and wiping the matter away with clean rags; to wash the conjunctivæ with a weak alum or boracic acid solution, 3 gr. to 1 oz.; to anoint the lid margin with cerate to prevent adherence, and to combat the feverish restlessness by fresh air and careful attention to diet.

Treatment of complications.—Lids: Lympho-membranous deposit when present should be carefully wiped away, and the raw surface painted with solution of quinine sulphate. The local lid stasis may be further relieved by mild mercurial purgation. Treatment as in an ordinary case of ophthalmia neonatorum may be resumed, care being taken to note that *the thinner or more scanty the discharge the weaker should be the caustic solution.*

Short lids—resulting retention of pus: It is my usual practice in cases of adult gonorrhœal ophthalmia to cut the outer canthus at an early stage of the disease. With greater elasticity of the lids in infants, this has so far not been considered necessary, as constant attention to drainage on the part of the nurse is usually sufficient to neutralise this disadvantage.

Corneal ulcerations: If corneal ulceration be present, it is no bar to the use of the silver solution, but is an indication for increased watchfulness, the use of the eserine sulphate, 4 gr. to 1 oz., and more energetic cleanliness on the part of the nurse. Should the ulceration progress to perforation, the same treatment is adopted until all discharge ceases. We have before stated that with the commencement of repairs we are able to appraise the ordeal through which the eye has passed. When do the efforts of nature require to be supplemented by the surgeon's art? *Not until the discharge has ceased*—except under one condition—that condition being *a large central perforation of the cornea, with forward pressure of the lens.* It is the pressure of the lens that prevents cicatrisation; it must therefore be removed. Here our operative procedures stop, for removal of an adherent iris, apart from the difficulty of its excision, presents fresh cut surfaces and open lymph spaces to infecting micro-organisms, which would thus be enabled to enter the globe and cause panophthalmitis.

Impending corneal perforation: Shall we open the anterior chamber to anticipate perforation? Such is not our practice, for three reasons:—(1) Sclerotomy—the best operation—is so difficult under the existing conditions, that it would be a serious menace to

the eye to attempt it, whilst tapping the base of the ulcer only precipitates the perforation, and does no good.

(2) Since De Wecker introduced eserine in the treatment of corneal ulcer, the most desperate conditions have recovered before perforation, and we never feel justified in interfering with the knife whilst hope of natural recovery exists.

(3) Our experience leads us to believe that, if perforation must occur, the selection of the perforating point is better left to nature, cure not infrequently resulting with comparatively slight opacity. The reader will understand that this refers only to ulcers in ophthalmia neonatorum. Where there is neither onyx nor hypopyon, the treatment of Sæmisch's ulcus corneæ attacking the adult is based on very different premises.—*Medical Chronicle, Jan. p.* 285.

77.—OPERATIVE TREATMENT OF ZONULAR CATARACT.

By David Little, M.D., Lecturer on Ophthalmology, Owens College; Senior Surgeon Royal Eye Hospital, Manchester.

I shall confine my observations chiefly to those cases of ordinary uncomplicated zonular cataract in which there is no arrest in the development of the eye, no shrinking of the lens, and no vitreous opacity or deeper seated disease. I have nothing new to offer in the way of operation, beyond advocating a method which I have found from experience to be the best for gaining good vision. It is this, that when destruction of the lens is decided upon, I recommend a free crucial rupture of the capsule with a needle, so as to make the whole lens opaque and more soft, and two or three days afterwards to perform extraction by means of a Teale's suction instrument.

The disturbance of vision caused by zonular cataract depends altogether upon the extent and density of the opaque layer. If, on dilating the pupil, the zone is broad and perfectly transparent, vision may be fairly good; on the other hand, if the central opacity is great, considerable reduction of sight must exist.

My experience in the examination of the refraction in these cases is that some are emmetropic, a few only are hypermetropic, but the great majority are myopic. I never fail to test the vision before and after atropine, at the same time using lenses to correct any defect in the refraction.

In the case of very young subjects whose vision cannot be accurately ascertained I postpone all interference for a time, unless it is quite manifest from the extent of the opacity that sight is bad. It is upon such an examination as this that I base my opinion for operative interference or otherwise.

I recommend destruction of the lens in all cases that are found to be of a progressive character, also in non-progressive cases where vision equal to at least twenty-fiftieths is not obtainable, after

dilating the pupil with atropine. I would go further than this in exceptional cases, and say, if I found that twenty-fiftieths was not sufficient sight for the requirements of the patient, and if he or she were between the ages of 10 and 25 (which I consider the most favourable age for operation), with perhaps some myopia, and all other conditions favourable, I would not hesitate to recommend extraction. When the lens, then, has to be dealt with, there is the operation by solution. This is a tedious process, and I hardly ever adopt it in zonular cataract.

I have been most satisfied with the suction operation. Having dilated the pupil, I make a free rupture of the capsule across the pupil extending from margin to margin; a similar rent is made from above downwards, keeping the needle well in the anterior part of the lens. The capsule is extensively ruptured in this way to cause its retraction well behind the iris, and so avoid secondary operations; the needle should not penetrate too deeply for fear of rupturing the hyaloid or dislocating the lens. A light bandage is placed over the eye, the patient is kept quiet, and atropine freely used to dilate the pupil. After two or three days, or more, according to the condition of the eye, extraction is performed by a Teale's suction curette. This is accomplished by making an incision in the outer part of the cornea, halfway between the limbus and centre, with a double cutting edged needle from 3 to 4 millimètres broad. Through this wound the curette is introduced into the area of the pupil, taking care not to push the open end behind the iris or too deeply into the pupil. Suction is then applied by the mouth, and by this means the whole of the pupil can be easily and rapidly cleared. The patient is then placed in bed, with a light bandage over both eyes; atropine is again used to keep the pupil dilated, and in the course of a week or ten days recovery may fairly be expected.

I have tried a Bowman's suction syringe, but I much prefer Teale's. The advantages of the latter are that suction can be better regulated by the mouth, and the hand is left free to guide the curette, while in the case of Bowman's there is a difficulty in applying suction by the hand, and directing the curette with it at the same time. The advantages of suction over ordinary linear retraction are that the pupil can be cleared with greater certainty, and there is little or no disturbance to the eye by pressure, two conditions, I think, of the greatest importance.

It is said by some there is a danger of suppurative iritis or iridochoroiditis in this suction operation. Speaking from my own experience, I have never met with symptoms so serious as to cause anxiety; and I consider the operation a safe one, if performed with care and judgment. I am careful that the curette is absolutely clean before use, and of late years I have used antiseptics at the time of extraction. On looking over my hospital and private notes

during the last eight years, I find that I have performed this operation in forty-two cases, and in the great majority of them I have secured brilliant results as regards sight. The records of some of them are somewhat imperfect, particularly as regards the resulting vision, partly from the youth of the patients, and partly, also, from the difficulty of following up hospital cases. The condition of the eye, however, has been noted in all. In no instance has there been a failure. In three cases there was synechia anterior; in five cases secondary operations had to be performed on account of capsule. In all the others there was a perfectly clear and round pupil, and I attribute this freedom of the pupil from capsule to its extensive rupture in the preliminary operation. The ages of the patients ranged from 5 to 27 years, and I have followed the usual practice of operating upon one eye only at a time.

Regarding iridectomy, I would say that if dilatation of the pupil improves vision to twenty-fiftieths with or without glasses, this operation, generally speaking, should be adopted, with a few exceptions to which I have already referred.

I should prefer iridectomy also, even when only a moderate improvement of sight can be obtained, in all cases accompanied by some mental defect in the patient, arrest in the development of the eye, shrinking of the lens, or when there is evidence or suspicion of posterior disease. When a small iridectomy is desirable, the best method is that recommended by Mr. Anderson Critchett, in a paper read before the B. M. Association, at Worcester, in 1882, to which I would refer you; he uses a broad needle, and a Tyrrell's hook, both instruments bent almost at a right angle, and excises a small portion of the pupillary margin of the iris downwards and inwards, leaving the periphery untouched.

Referring to the current belief that zonular cataract remains stationary throughout life, I have no conclusive evidence to show that opacity has ever become developed in a zone once absolutely transparent; but I believe that later in life, when the lens becomes harder, the opacity extends to the deeper nuclear layers, and so causes serious deterioration of sight. I have seen at least four cases about 50 years of age, in whom sight had become slowly reduced to 20 Jäger, apparently from no other cause than an increased density of the central opacity, involving the whole nucleus.

In operating upon such cases by the ordinary method for hard cataract, I have always found the eye most intolerant of operation. In every case, more or less, iritis followed, and many weeks elapsed before recovery took place.

The main purpose of this paper is the recommendation to perform extraction by suction oftener than is generally done, because I think that cases are frequently treated by the easier method of iridectomy, in which the resulting vision is disappointing to both patient and surgeon.—*British Med. Journal, Jan.* 28, 1888, *p.* 178.

MIDWIFERY

AND

THE DISEASES OF WOMEN, ETC.

78.—ON THE CONTRACTIONS OF THE UTERUS DURING THE WHOLE OF PREGNANCY.

By J. Braxton Hicks, M.D., F.R.S., Obstetric Physician to St. Mary's Hospital; Consulting Physician to Guy's Hospital.

Sixteen years have elapsed since I first directed the attention of the profession to the fact that during the whole of pregnancy the uterus contracted and relaxed at intervals of variable length, generally from five to twenty minutes, each contraction lasting from about three to five minutes. Since that communication to the London Obstetrical Society in 1871 my attention has been constantly directed to this phenomenon, and I have endeavoured to illustrate the physiological effects of these contractions in the Proceedings of the Royal Society (England), No. 195,879, in a "Note on the Auxiliary Forces concerned in the Circulation of the Pregnant Uterus and its Contents in Woman." I have there shown tracings of the alteration these contractions make on the respiratory wave of the abdomen over the uterus. Since my first paper I have added much to my previous knowledge, and have found the information thus obtained of very great practical value in the diagnosis of both normal and complicated pregnancy. Additional cases with remarks have been brought before the International Medical Congresses, and published in their transactions. Since these publications other interesting cases have occurred in my practice, affording fresh evidence of the value our knowledge of these contractions gives us in unravelling conditions otherwise puzzling or insoluble. A selection of these, in illustration, will be given in this paper.

But first it may be helpful to make a brief sketch of our present position. In the first place, it is proper to point out that where the uterus is beneath the fourth month of pregnancy it is much to be preferred that we employ both external and internal palpation; after this time this is not so necessary. If it be undesirable, as when we merely suspect pregnancy in single girls or women, to employ external examination, the outline of the uterus will generally be sufficiently defined if we place one hand over the lower abdomen, one edge slightly resting on the pubes, and then causing the person to inspire freely and frequently. We shall easily perceive its presence by the resistance of the uterus; and by continu-

ing our observation sufficiently long we shall detect any variation which may occur in its solidity. For although sometimes the variation may not be very marked even at the fourth month of pregnancy, yet the flaccid stage is often so complete that all sensation of resistance is lost except to very careful bimanual examination. It may here be noted that when our hand is first placed over the uterus, this organ may be in a state of contraction, and consequently firm; or it may be flaccid, so much so as not to be easily recognised. It is only by waiting patiently that we can determine the variation. The time occupied in this can be passed in inquiries concerning other matters. Supposing, then, a single young lady is brought to us for amenorrhœa of four or five months' duration, and an increase in the size of the abdomen has been noticed by the friends, an easy opportunity is afforded us of making a superficial examination, and thus, without implying any suspicion, we can ascertain, first, whether there be any swelling in the uterine region; and, secondly, if there be, whether it be persistently firm or of varying density. Should the latter be the case, we know of no other condition coupled with amenorrhœa which presents these features; and thus we have sufficient grounds to go further into the matter, and to proceed, if necessary, to propose an internal examination. Even should no change of size have been observed, external palpation can generally be obtained. I think it will be fully recognised as a great advantage that we are thus able to obtain decisive proofs of pregnancy before suggesting the possibility of its existence, or before alluding to the subject at all.

Not only in the recognition of pregnancy, but also and particularly are we assisted by making use of our knowledge of these contractions when it is attended by complications. Where we have a mural fibroma, we are able, by watching the condition of the uterus during these alterations of density, to distinguish generally between the portion occupied by the pregnancy and that by the tumour. But where there are many tumours and the pregnancy early, this is not so easy—sometimes it is impossible. In a rapidly growing ovarian tumour the diagnosis between it and a gravid uterus is important, and in the majority there is considerable difficulty; but by the signs I have given there will generally be a tolerably easy solution of the question.

Where pregnancy occurs in a normal uterus along with the presence of an ovarian tumour, we are enabled in like manner to decide which swelling is the uterus and which is the ovarian growth. So also, where an extra-uterine pregnancy is suspected, we can decide against the supposition if we observe the swelling change in density, for of course no such change takes place in extra-uterine conception; but it is obvious that we must not be too hasty in assuming that because we cannot for a time feel this sign the pregnancy is extra-uterine, for the uterus sometimes is

very quiescent, and therefore extended observation will be required before the negative can be taken as a positive.

In cases where a double uterus is present and one side is impregnated, there may be a suspicion of extra-uterine fœtation; but if the tumour, which would be on one side, alter its density, we shall be certain the ovum is within the uterine wall, though it may be probably difficult to say whether it be all one portion of a double uterus or the single uterus drawn over by adhesions to the side. It may, indeed, be quite possible to have both a normal pregnancy and an extra-uterine concurrently; and here again we are also in a position to decide and discriminate the one from the other.

In twin pregnancy it not infrequently occurs that one ovum has died, dwindles, and becomes somewhat solidified, producing a want of symmetry in the form of the uterus; and this particularly if the other ovum at the same time is affected with hydramnios, so that there is much difficulty in making out the actual condition. In such a case we are generally able to notice that when the uterus becomes firm the whole of the irregular swelling becomes a firm spheroid, and thus the several parts are proved to be within the same walls, which can only be the uterine; while palpation and the stethoscope will reveal the dual contents.

When the uterus is over-distended, as by hydrops amnii, we are to a large extent unable to detect the contractions, and the diagnosis between this state and ovarian dropsy must be made out by other means. In distension by the large and rapidly growing vesicular mole (hydatiniform degeneration of the chorion) I have noticed these contractions occur as in a natural pregnancy. However, in mole conceptions of the solid kind (apoplectic ovum, &c.), or where the fœtus has been blighted and the whole ovum become more substantial, the uterus often continues for a long time firmly contracted, and thus we have a state which may be imitated by a soft fibroma, though in this latter complaint the menses are generally excessive and frequent, but generally not postponed or absent for a month or two, as is the case most frequently in mole conceptions. In fibroma the menses are, as I have just said, in excess, either in time or quantity, or both, except in those cases where the loss is very great and the anæmia profound. But these fibromas are generally not of recent origin, there is commonly a long history. It has been stated, though I myself have never yet observed it, that there is an alteration of density in cases of soft uterine fibroma. If this be the case, it must be rare, and taking the histories into account we are not likely to be misled. It would only be in cases of mole conception or blighted ovum in the earlier months of pregnancy that the point would arise. In normal pregnancy the complete flaccidity of the walls during the relaxed state is quite different from the simple alteration of density, and it is then that the fœtal parts can be felt generally without difficulty.—*Lancet, Jan.* 14, *p.* 65.

79.—ON THE MANAGEMENT OF ANTERIOR AND POSTERIOR DISPLACEMENTS OF THE UTERUS.

By J. Halliday Croom, M.D., F.R.C.S.E., Physician for Diseases of Women to the Royal Infirmary, Edinburgh.

I am fully alive to the responsibility which anyone incurs in venturing to lay down definite lines of treatment concerning anterior and posterior displacements of the uterus, for I believe I am safe in saying that upon no subject in gynæcology has greater diversity of opinion existed, and upon none have more opinions been expressed with equal confidence. This subject has been the bone of contention between different schools of gynæcology for many years. That this should be the case is easy of explanation, and that for various reasons: (1) Because many teachers and practitioners have regarded the conditions as merely mechanical, and directed their treatment accordingly; (2) others have considered the conditions as the result of inflammatory action, and their treatment has been in strict accordance with their views; (3) others, perhaps the largest class of all, have regarded symptoms alone, and treated the conditions empirically; (4) it must be further kept in view how frequent are deviations in the position of the uterus, and how prone we are to seize any seemingly pathological condition as an explanation of symptoms and to treat it vigorously when the condition is all the time only a coincidence, not a cause.

Now, in venturing to offer to you a sketch of the treatment of the displacements under consideration, I would have it clearly understood that anterior and posterior displacements occur in two great groups:—1. Displacements in virgins or nulliparæ. 2. Displacements in parous women.

In regard to the first class I am inclined to look upon them, speaking generally, as being congenital conditions; the ante-flexion being in the direction of non-development, and the retro-flexion in the direction of deformity. These conditions in virgins are not infrequently associated with diseased conditions of the annexa, and when they are it is the inflammatory condition of the annexa which requires treatment, and not the congenital deformity or non-development. A well-marked illustration of this came under my observation lately when a patient had for eight years been under treatment with pessaries for an anteflexed undeveloped uterus. Her distress was so great and persistent that I removed the ovaries, which were extensively diseased, and the woman has had comfort ever since, the uterus still remaining anteflexed. The progress which gynæcology has made in recent years in advancing our knowledge of the uterine annexa has shown conclusively that many cases of pain and dysmenorrhœa which were formerly attributed to uterine displacements are due entirely to conditions of the

ovaries and tubes independently of a concurrent displacement which may mean nothing. Deviations in the position of the uterus of minor degree give rise in the single woman to no symptoms, and require, therefore, no treatment. Marked versions uncomplicated with some pathological condition, such as a fibroid, are rare in single women, and when uncomplicated give rise to very slight symptoms, and need no mechanical interference. When the flexion backward or forward is very acute, I do not deny that it may be associated with severe dysmenorrhœa. Even admitting that these displacements in virgins give rise to some discomfort, what treatment is at our disposal? Vaginal pessaries are seldom if ever curative, and intra-uterine pessaries are surrounded with such risk in the direction of inflammation, hæmatocele, and ovaritis, that so far as I am concerned I have discarded their use altogether. Let it be distinctly understood that I by no means wish to say that, in the hands of an experienced gynæcologist, there are not cases, especially of retroflexion in virgins, in which the pressure symptoms from hypertrophy and enlargement are to be remedied in no other way than by stem pessaries, but these cases are, so far as my experience goes, extremely few, and do not need to be discussed in a general view of the case. It is only fair to say that intra-uterine stem pessaries have within my knowledge, in some exceptional cases, rendered benefit; but on looking back over an experience of nearly twenty years I mean to say that I have known them do more harm than good, and as a teacher of gynæcology I have found it my duty to warn students and practitioners against their use.

But the question naturally arises as to the cure of dysmenorrhœa, which unquestionably is often associated with, although not necessarily dependent on, these displacements. Is no mechanical treatment to be adopted? Now, upon this point there seems to be too great a tendency to local interference for dysmenorrhœa in virgins. I should withhold local treatment altogether unless its severity be such that, after all other means failed, it interferes with a rich woman's social engagements or a poor woman's means of livelihood, for it must always be kept in view that dysmenorrhœa is but a relative term. When, however, local examination and treatment become necessary, then vaginal pessaries are of little avail, and intra-uterine stem pessaries are unsafe. Dilatation of the cervix with a dilator bougie or an occasional passage of the sound, with the persistent use of the hot vaginal douche, will often effect a cure both effectively and safely. Here I must enter a caveat against the indiscriminate use of the sound and dilators, unless accompanied by careful precautions: and these are (1) that there be no recent or remote peri-uterine inflammation; (2) that the greatest care be taken as to the perfect cleanliness of the instrument. Much as we owe to the sound, yet I feel sure that

its indiscriminate and routine use has been a fertile source of uterine mischief.

In a word, then, in unmarried women and nulliparæ, with some exceptions too few to affect the general statement (the conditions being usually congenital), vaginal pessaries are of no avail, and intra-uterine are always dangerous and usually hurtful. When aggravated dysmenorrhœa is concurrent with a simple displacement, then the use of a sound, bougie, or dilator, along with hot water, will often effect a cure. If there be the least pathological condition to be found in the annexa, there should be no mechanical treatment, but only the hot douche.

With regard to parous women, the case stands differently. In them, unlike the others, the displacements are usually, if not always, acquired. In the case of anteflexion and anteversion, which in parous women are so often induced by various forms of peri- and parametritis, and by inflammation of the utero-sacral ligaments specially, mechanical treatment in the shape of pessaries is seldom indicated. The sphere for anteversion and anteflexion pessaries in parous women—if, indeed, they have a sphere at all—must be when the displacement does not depend upon any inflammatory condition outside the uterus, but is solely due to an increase in its weight. Even in such cases, which are rare, the trouble and annoyance to both physician and patient attending their use is more than sufficient to outweigh their temporary comfort. Of stem pessaries in forward displacements of the uterus in parous women, I have no experience, and I have yet to see the case in which I consider their use desirable. The majority of these anterior displacements give rise to very unimportant symptoms. When they do, the symptoms are due to some inflammatory products outside the uterus, and the treatment is to be directed to its removal (1) by the hot vaginal douche; (2) by blisters; (3) by iodine applied to the vaginal roof; and (4) by small doses of iodide of potassium and perchloride of mercury internally. Sometimes a soft glycerine ring pessary, by relieving tension and elevating, may do good, but as a rule even this is contra-indicated.

Coming now to posterior displacements in parous women, namely, retroversion and retroflexion, we are bound to recognise the fact that they are specially prone to arise mechanically. This will appear obvious if we consider the frequency with which these conditions occur after pregnancy as a result of imperfect involution, dorsal decubitus, increase in weight, and too early rising.

The origin of these parous posterior displacements being usually, though not always, mechanical, and the symptoms to which they give rise, such as sterility, leucorrhœa, menorrhagia, and pressure to a greater or lesser extent being well recognised, their treatment must be mainly based on mechanical principles.

1. Tone must be given to the uterus by the use of ergot and hot-water douching.

2. The uterus must be carefully adjusted in one of several ways: (*a*) by pressing up the fundus; (*b*) by pressing back the cervix; (*c*) by the genu-pectoral position; (*d*) by dragging down the lip of the cervix with a volsella; and lastly, by the sound. In any case, accurate and careful reposition of the uterus in any of the ways I have mentioned is essential. I place the sound last because I really think that the bimanual replacement of the uterus is the safest and most thorough, and because the introduction of any body into the cavum uteri is always to be avoided when practicable.

3. The uterus must be retained in position by a pessary. In the case of a well-marked retroversion, a well-adjusted Hodge, or some of its many modifications, will be found to act efficiently, whereas in the case of a well-marked retroflexion the ordinary ring pessary will act better than the Hodge. The Hodge in such circumstances is inapplicable because of the difficulty of adjusting it so as to act with much advantage on the fundus, and it is apt to get into the sulcus between the cervix and uterus, and so aggravate the condition it was intended to cure. In such cases the ordinary ring pessary, by elevating the whole uterus, will give most relief.

In some aggravated cases of acute flexion with hypertrophy, stem pessaries may, under exceptional circumstances, be required, but this must always be regarded as a *dernier ressort*.

In that class of cases—which is exceedingly frequent—where there is some degree of flexion and version combined, the Hodge will most frequently meet the requirements of the case. Should there be any adhesions or any ovarian prolapse the soft india-rubber glycerine ring will be most generally serviceable.—*British Med. Journal, Feb.* 11, 1888, *p.* 286.

80.—ON THE TREATMENT OF PLACENTA PRÆVIA.

By Robert Barnes, M.D., F.R.C.P., Hon. President of the British Gynæcological Society, &c., London.

1. The greatest amount of flooding frequently takes place at the commencement of labour, and frequently even before there is any clear indication of labour; generally at what would have been a menstrual period. The cervix is always, from its being near the seat of placental attachment, highly vascular, and is frequently at this stage very rigid. Any attempt to force the hand through this structure at this stage, to detach the whole placenta or to deliver, must be made at the risk of injuring the womb. The dragging the child through the cervix, even when it has not been necessary to pass the hand into the uterus, is a proceeding afford-

ing slender chance of life to the child, and fraught with peril to the mother. Hence the indication to pursue a course of treatment as free from violence or precipitation as possible.

2. The entire detachment of the placenta is not necessary, and is not to be depended upon, to arrest the hemorrhage. (Since my demonstration of this point, Simpson, I believe, abandoned the practice, and I do not think anyone now advocates it.)

3. Since the dilatation of the cervical portion must take place in order to give passage to the child, and since during the earlier stages of this necessary dilatation hemorrhage is liable to occur, it is desirable to expedite this stage as much as possible, avoiding violence.

4. In cases where labour appears imminent, with considerable hemorrhage, whilst the os internum uteri is still closed, the arrest of the flooding and the expansion of the os may be promoted by rupturing the membranes and the use of tents.

5. Since a cross-presentation or other unfavourable position of the child is apt to impede or destroy the regular contractions of the uterus, which are necessary to arrest the flooding, it is mostly desirable to deliver as soon as the condition of the os uteri will permit.

6. In some cases the simple use of means to excite contraction of the uterus, as rupturing the membranes or the employment of galvanism, may suffice to arrest the hemorrhage.

7. In some cases in which it is observed that the os uteri has moderately expanded, or to a diameter of 1·25 inch or 4 centimètres, the placenta being felt to be detached from the lower zone, and the hemorrhage having ceased, it is not necessary to interfere with the course of labour, now become normal. Hemorrhage rarely persists after full canalisation of the passage.

8. At the critical period, when the total detachment of the placenta or forcible delivery is dangerous or impracticable, the introduction of the index finger through the os, and the artificial separation of that portion of the placenta which adheres within the lower zone, is a practicable and safe operation.

9. The artificial detachment of that portion of the placenta which adheres within the lower zone will at once liberate the os internum from those attachments which impede its equable dilatation; and, by facilitating the regular contraction of this segment of the uterus, favour the arrest of hemorrhage, and convert a labour complicated with placenta prævia into a natural labour.

10. The immature uterus, partly paralysed by loss of blood, cannot always be trusted to assume the vigorous action necessary te effect delivery; it is, therefore, necessary to aid canalisation by dilating the cervix artifically; this can be done safely and quickly by my caoutchouc water dilator. This has come into general use, and the testimony in its favour is conclusive. But

one or two German teachers say it is not effective. The bags they have tried must be bad specimens, or skill in using them was wanting.

11. Sufficient dilatation being obtained, delivery may, if necessary, be accelerated by forceps, by turning, or by embryotomy, according to the special indications dictated by the condition of the child. If turning be resorted to, I insist strenuously upon the importance of delivering the after-coming head by the forceps, if there be any difficulty or delay in the passage of the head under manual traction. The forceps so applied takes off the constriction of the imperfectly dilated cervix from the child's neck; and traction bearing upon the head, facilitates moulding, and takes off all strain from the neck; axis-traction also is to be observed. In my hands, this proceeding has contributed materially to the saving of the child.

The measures that come into successive use are:—1. Rupture of the membranes. 2. Apply a firm binder over the uterus. 3. A plug may be used to gain time, but it must not be trusted; watch closely. 4. Separate all the placenta that adheres within the lower zone, and observe closely. If no hemorrhage, wait awhile. The uterus may do its own work; if not, dilate the cervix by water bags. Again pause and observe. If Nature fail to deliver, we resort to the forceps, which gives the best chance to the child, or turn.

In following this order of procedure, we strictly follow the law of physiology. We do not force Nature, but obey her. Current medical literature is full of examples proving the value of these precepts, and not a few cases published as illustrations of the success of other methods, especially of turning, are more correctly explained by the fact, probable in many, certain in some, that in carrying out the operation of turning, the placenta had been detached from the lower zone. Where the principles enunciated by me have been thoroughly and intelligently observed, as has been done on a considerable scale, as by Dr. Murphy, the success has been unexampled.

An emphatic illustration of the treatment advocated by me is found in the following summary of the experience in placenta prævia in the practice of St. Thomas's Hospital for 1887 (see Reports) by Dr. Cory:—"Five cases occurred during the year. In one case there are no particulars; in two the placenta was partially separated, and delivery effected by forceps; both children were saved. In two the placenta was partially separated; version was performed, and the children were lost; all the mothers recovered." Dr. Cory adds:—"The lesson to be learned in these cases is well shown, namely, never attempt version if the head is presenting, and hemorrhage has been stopped by the partial separation of the placenta."—*British Medical Journal, March* 3, 1888, *p.* 459.

81.—COMPARISON OF THE CÆSAREAN SECTION WITH PORRO'S OPERATION.

By Sir T. Spencer Wells, F.R.C.S., Consulting Surgeon to the Samaritan Hospital for Women and Children, London.

Fifty years ago, when I was a student in Dublin, the comparative danger of Craniotomy and the Cæsarean section was the subject of warm discussion. Montgomery, Beattie, Churchill, and many others argued the question with great ability, with wide diversity of opinion, but with the perfect good temper of friendly rivals anxiously seeking for truth, and with the earnest desire to benefit mankind. At that time the operation which Porro described as "utero-ovarian amputation completing Cæsarean section" had not been seriously considered. Ten years before my student days in Dublin, that remarkable man, James Blundell—always far in advance of his time—had said to the students of Guy's Hospital, in 1828: "In speculative moments, I have sometimes felt inclined to persuade myself that the dangers of the Cæsarean operation might be considerably diminished by the total removal of the uterus. Perhaps this method of operating may prove an eminent and valuable improvement."

Blundell and other operators in Germany, Italy, and Russia proved by experiments on rabbits, sheep, and bitches that the uterus is not at all necessary to life; but it was not until 1869 that there is any record of amputation of the gravid uterus having been attempted in a living woman. In that year, Dr. Storer, of Boston, performed Cæsarean section, without any idea of doing more. But the uterus was the seat of a fibro-cystic tumour; severe bleeding occurred, and Dr. Storer removed the uterus as the only means of stopping bleeding. It was not until seven years after this, that Professor Porro performed the first premeditated operation which is now known by his name. This was in 1876, and within eight years after that time Dr. Godson was able to bring before the Obstetric Section of the British Medical Association, in 1884, not only a case of his own performed in 1882, successful both to mother and child—the first in the United Kingdom—but to give particulars in tables, admirably arranged and compiled with rare industry, of 137 cases of true Porro's operations, and of 5 other cases of utero-ovarian amputations during pregnancy, before the fœtus was viable; and of 6 cases where the fœtus was removed from the abdominal cavity by laparotomy, and the ruptured uterus was amputated. Dr. Godson afterwards published a supplement to his tables, bringing the historical record up to the latter end of 1884, and the number of true Porro's operations to 152, with a result to the mother of 66 recoveries to 86 deaths, a mortality of 56·5 per cent. Excluding the children who only lived a few hours, 96 were living. Thus, the number of women who recovered, 66,

added to the 96 living children, makes a total of 162 lives saved by 152 operations.

My own experience of Porro's operation is limited to one case, so is my experience of the Cæsarean section, with one case where I excised a cancerous uterus which contained a fœtus of about the sixth month. I fear that, although the three women all recovered, I can do little more than offer a few suggestions for consideration, and invite discussion upon questions which still wait for authoritative decision.

Perhaps the case which I have called one of Cæsarean section can hardly be considered as thus accurately described, for the child was not viable, but only a fœtus of about the fifth month. But the case is of some importance in its bearing upon the discussion invited to-day, and in the history of the Cæsarean section, as I believe it was the first case where the opening in the uterine wall left after the removal of the fœtus and placenta was closed by sutures. I published a full report of this case more than twenty years ago (Med. Times and Gaz., Sept. 30, 1865).

After removing an adherent multilocular cyst of the left ovary, weighing about 28lbs., I tapped what I took for a cyst of the right ovary, and found it to be the gravid uterus. A quantity of liquor amnii and a fœtus of about five months' escaped, and I easily peeled off the placenta from the inner surface of the uterine cavity. I made a free opening into the vagina by passing my finger from above through the os, and when bleeding was arrested by uterine contraction, I brought the peritoneal edges of the opening in the uterine wall together by an uninterrupted suture of fine silk, one long end of which I had previously passed into the uterine cavity, and out through the os into the vagina. By seven or eight points the uterine edges were brought accurately together, and the upper end of the silk was brought out through the opening in the abdominal wall. Although this patient recovered and is still in good health, she went through a period of very serious illness—fever, pain, profuse discharge and protracted convalescence—in striking contrast to the two cases where I removed the entire uterus.

In the first of these two cases the fœtus was only about a week over the six months after conception. After opening the uterine cavity, and allowing the liquor amnii to escape, I removed the fœtus, and then the uterus and both ovaries, with a cauliflower mass limited to the cervix which may be described as a growth "midway between papilloma and epithelioma." This patient recovered as well as after an average ovariotomy, and remained fairly well for several months; but she died of intra-abdominal cancer about a year after the operation. The case was brought before the Royal Medical and Chirurgical Society in 1881.

The true Porro's operation is not an excision of the entire uterus.

It is the completion of the Cæsarean section by supravaginal amputation of the uterus, and it was not proposed by him with reference to uterine cancer or any form of uterine tumour, but simply to save the woman from many of the dangers which follow the Cæsarean section when the uterus and ovaries are not removed.

In my case, a full report of which appeared in the Journal last June (vide *Retrospect*, vol. xcvi., p. 377), it is almost certain that the entire uterus was removed, although after recovery something like the lips of the os could be felt at the top of the vagina. The impediment to parturition was not deformity of the pelvic bones, but the presence of a large, solid, immovable fibroid tumour of the uterus, which rendered delivery by the natural passage impossible. Supposing the Cæsarean section only had been performed, the child and placenta removed, and the uterus with the tumour left undisturbed, it is certain that the patient would have been left in a position of considerable peril to life, and if recovery did follow, she would still have been left with her pelvis blocked up by a solid tumour. While this was an additional reason for preferring Porro's operation to the Cæsarean section, the presence of the tumour (which was afterwards found to weigh 9 lbs.) added considerably to the difficulty and danger of the operation.

In an ordinary case, where there is no uterine tumour, the uterus after removal of the child may at once be brought out through the opening in the abdominal wall, transfixed above the vagina and surrounded by an elastic ligature, or by a wire tightened by a screw. Then the stump would be secured outside the abdomen, with the peritoneum carefully closed around it, just as we used to treat the pedicle of an ovarian tumour when the clamp was used.

It would certainly appear, from a study of recorded cases, that the danger to the mother is much less than when the empty uterus is left within her, whether the opening in the uterine wall be closed by suture or not. In my case, although the presence of the large tumour, added to the time taken up by the operation, and to the size of the stump, and to additional care in separating the bladder and avoiding the ureters, recovery went on with surprising rapidity, and both mother and child have been, ever since the operation last May, as well as after an ordinary natural labour, the mother being saved from any risk of possible pregnancy hereafter.

I need not say more of a case which has been so recently published, but I shall be happy to give any further information which may be desired, and will only in conclusion invite discussion on the question under what circumstances in the future, when delivery of a child by the natural passages by craniotomy, evisceration, or any obstetric operation is impossible, the operator should be satisfied by the performance of the Cæsarean section alone, or should complete his work by removal of the ovaries and of the uterus wholly, or in part? It may be too much to expect that any rule can be agreed

upon which should be obeyed in every case without exception; but it may perhaps be possible, by careful comparison of the dangers and advantages of the Cæsarean section alone, or as completed by Porro's operation, to arrive at some general idea of the true value of both.—*British Medical Journal, Oct.* 29, 1887, *p.* 928.

82.—ON DR. MARTIN'S METHOD OF DEALING WITH THE PLACENTA AND SAC IN LAPAROTOMY FOR EXTRA-UTERINE PREGNANCY.

By Ernest Annacker, M.D., M.R.C.S., House-Surgeon to St. Mary's Hospital, Manchester.

One of the most interesting questions in connection with the treatment of advanced extra-uterine fœtation by laparotomy is the method of procedure in regard to the placenta, upon which the failure or success of the operation is believed largely to depend. My object in this paper is to draw attention to the plan proposed, and successfully adopted by Dr. A. Martin, of Berlin, according to which it becomes possible to remove the placenta with the fœtus, at any period after its formation, without serious risk of hemorrhage.

Most recent writers on this subject, including Thomas, Hicks, Barnes, Kœberlé, and Tait, are agreed that the placenta should in most cases be left behind on account of the severe hemorrhage which frequently attends its removal, instances being indeed very numerous where death has resulted from this cause. That it is a point on which the experience of competent observers differs very widely may be gathered from the fact that Schroeder removed the placenta as early as three weeks after the death of the fœtus without experiencing any untoward result, while Depaul, on the other hand, removing the organ four months after the activity of the placental circulation had had time to diminish by reason of the death of the fœtus, had the misfortune to lose his patient from hemorrhage. This is a by no means isolated experience.

The disadvantages of leaving the placenta behind are (1) the tedious and protracted convalescence; (2) the danger of death from hectic and exhaustion owing to long-continued suppuration of the sac and its contents during the process of disintegration and throwing off; (3) the possibility of secondary hemorrhage such as occurred, for example, in a case related by Braxton Hicks.

Parry, of Philadelphia, writing in the year 1876, states that the frequency of secondary hemorrhage after spontaneous separation of the placenta, as compared with that after its forcible separation, is as one to five.

Most authorities are agreed that the organ may be safely removed some months after the death of the fœtus, when the vessels traversing the placenta have atrophied and contracted, the venous sinuses having become thrombosed, and the whole organ very much

diminished in size; but it was reserved for Dr. Martin to devise a means by which the placenta may be removed at any period with hardly any greater risk of hemorrhage than attends an ovariotomy or an extirpation of the uterus.

The reasons which led Dr. Martin to work at this subject may be given in his own words, quoted from a communication read before the International Medical Congress held at London in 1881. He says: "It is, however, evident to all that convalescence is considerably endangered by this procedure (avoidance of the placental site) for even if the sac, as such, were closed, and the diligent irrigation of the sac should prevent stagnation of the secretions in the cavity, still it is clear that the recovery is thus retarded greatly, and the patient liable to such dangers as accompany the processes, even with strictest antiseptic precautions." He acknowledges that the ligature of separate bleeding points on the placental site is not feasible, but by ligature *en masse* "large bleeding surfaces can be tied quickly and safely, so that we need not fear secondary danger from the hemorrhage."

It might be objected that the placenta may be fixed to the intestines, or some part from which it is irremovable; but to this Martin replies that it is more of theoretical than practical importance; not that he denies the possibility of its occurrence, but, not having met with a single case of this nature in eighteen laparotomies for extra-uterine fœtation, he comes to the conclusion that, in discussing the question broadly, too much stress must not be laid on these rare and exceptional cases, in which, if necessary, and if the placenta cannot be removed without danger of fatal hemorrhage, it may be left *in situ* and allowed to disintegrate.

I had the privilege of being present at the operation on the following case of Dr. Martin's, in which the successful removal of the placenta, which I wish to emphasise, is well illustrated, as well a the method of treating the sac by partial resection, a procedure generally employed by Dr. Martin in these cases. For the notes of the case I am indebted to Dr. Czempin, house surgeon at Dr. Martin's clinic.

The patient was a married woman, and sterile up to last March. Since that time she had complained of pain in the hypogastrium, especially on the left side. She had menstruated regularly for fourteen years; but in March, after menstruating at the commencement of the month, there was again some loss a fortnight later, while throughout the whole of April she did not menstruate at all. In May there was slight hemorrhage on two occasions, but none between that time and her admission to the hospital in July.

The vagina was fairly capacious; the cervix behind the symphysis pubis; the body of the uterus was short, and behind the uterus a tumour, rather larger than a man's fist, was felt on the left side, and diagnosed as tubo-ovarian.

On July 7th the operation for removal of the tumour was undertaken. Chloroform was administered, and the abdomen opened by an incision four inches long in the middle line, when the peritoneal cavity was found full of recent and old blood-clot—the tumour having evidently burst. The intestines were spread out on the wall of the abdomen, and covered with a damp cloth, after which the clots were easily removed from the pelvic cavity with spouges. To the left side of and behind the uterus was seated a tumour corresponding to the one felt on examination; on attemping to loosen the latter from its connections a rent occurred in the anterior wall, and through it a four-month-old fœtus and some blood-clots escaped. The fœtus was still attached by the umbilical cord to the placenta, which remained in the cyst. Introducing the hand into the cyst it was possible to remove the whole placenta without any severe hemorrhage. A large portion of the sac was next resected, and the remainder stitched together with continuous catgut suture, after introducing a drainage-tube through the pouch of Douglas into the vagina, so as to shut off the sac as much as possible from the abdominal cavity. The abdominal wall was then united by silk sutures. The operation lasted eighteen minutes. The patient recovered without a bad symptom, the temperature never rising above 38·2° C. The tube was removed on the thirteenth day after the operation, and on the sixteenth day the patient left the hospital convalescent.

In another case upon which Dr. Martin operated at the end of the sixth month of pregnancy, the placenta was seated upon the anterior wall of the sac, which was formed by the back wall of the uterus and the left lateral ligament. After the removal of the fœtus hemorrhage took place in spurts, quickly filling the sac. As soon as Dr. Martin recognised the nature of the case he cut off the communication with the uterus by three deep sutures, carried by means of curved needles through the broad ligaments, and embracing the left side of the uterus. The placenta was then removed and found to be very friable, but entire; no hemorrhage followed its removal. The sac was treated by resection, and the operation was concluded in an hour and a quarter. The patient made a perfect and speedy recovery.

The method of dealing with the sac of an extra-uterine fœtation employed by Dr. Martin is different from that of many operators. Instead of stitching the sac to the abdominal incision, he removes as much of the walls as possible, drains through the pouch of Douglas into the vagina, and unites the edges together at the highest part of the sac, thus being enabled to close the abdominal wound entirely. By this means healing by first intention is possible, drainage is obtained through the most dependent portion of the sac, and recovery is much more speedy.

During the last six months I had an opportunity of examining a

patient on whom Dr. Martin had operated some months previously for extra-uterine pregnancy in the manner here described. The uterus was fairly mobile, and the only remains of the patient's abnormal burden was a thickened cicatricial band, about the size of the little finger, extending backwards from the cervix, on the left side of the uterus.

Three years ago Dr. Martin described his method in a paper read before the Copenhagen Congress, but it was the opinion of Werth and most of the authorities present that time was needed to test its efficiency.

Dr. Martin has now had nearly twenty cases in which he has put in practice his method of dealing with the placenta and the sac, and he considers that the results quite justify him in maintaining its superiority over the methods hitherto in vogue.—*British Med. Journal, Feb.* 11, 1888, *p.* 290.

83.—ON THE TREATMENT OF ABORTION.

By Murdoch Cameron, M.D., Physician Accoucheur to the Glasgow Western Infirmary.

Concerning the complications which might arise in abortion cases, those from hemorrhage and septicæmia, or both combined, are the most common. The bleeding may be moderate in a large number of cases, yet at times it may be very alarming. This bleeding may be met with either at the outset, when the embryo is separating, or after it has been expelled, and the membranes yet remain within the cavity of the uterus, or even after complete delivery. The bleeding may be continuous or intermittent, even with days between the attacks. Sometimes the discharge arrested in the passage becomes clotted, and is expelled in a mass, which the physician is apt to mistake for the contents of the womb, unless he takes care to examine for the embryo and membranes.

Uusually the bleeding ceases with the discharge of the embryo and membranes or placenta. Should it continue it is likely that there is a portion retained within the cavity. If a small portion of the placenta remains adherent, the bleeding may continue for weeks.

If the odour of the lochia becomes fœtid, we should be on our guard against septicæmia. The odour is very persistent, and the finger with which the patient has been examined retains the taint, in spite of repeated washings and scrubbings with a nailbrush.

The treatment adopted will determine the result for better or worse. I do not wish to speak of the preventive treatment of abortion, but would like to say a few words on the treatment of these complications. To avoid the manufacture of complications, if I may so speak, I would recommend that the membranes should be left intact, and encouragement given to complete expulsion. If

the membranes are ruptured, one should not be in a hurry during the earlier periods of pregnancy, but should pay special attention to the cleanliness and antiseptic condition of the passages, by making use of repeated injections.

Should the placenta be retained, I have seldom had much difficulty in extracting it with the fingers, and must say I have very little faith in the use of instruments for its extraction, unless when it is found protruding through the os. Some have recommended the use of a blunt curette, whilst others prefer a sharp one, with which they profess to remove the *débris* of the membranes. In addition to this, they either dilate the os to allow of such an operation, or they drag the uterus down by means of forceps. Now is such treatment reasonable in all cases? Is retention of the placenta so common and so frequently dangerous as to justify a procedure which is itself not without danger to the patient? I emphatically say No; and, after a very large experience, have no hesitation in condemning such practice. Why, in one case, after the uterus had been scraped, cauterised, and injected, to the surprise and chagrin of the operator there was expelled the next day an embryo, minus the legs. Besides, with the curette you are working in the dark, and cannot fail to wound the healthy membrane, and so assist septicæmia instead of preventing it.

If membranes alone have been retained, with proper antiseptic precautions there is little chance of evil resulting. Besides, when one considers the amount of injury that an inexperienced person can inflict with a uterine sound, we should surely pause before placing in the hands of every practitioner a curette, be it sharp or blunt, with the assurance "This is the real cure, use it."

In treating the hemorrhage I generally make use of an antiseptic tampon, with the application of a well-fitting firm bandage, and usually find such means sufficient. I cannot say that I have got good results from ergot. Where spasm or rigidity of the os uteri is the opposing cause of the escape of the placenta, I have frequently had good results from the administration of opium in the form of a two-grain pill.

Whenever a finger can be passed within the uterus, by fixing the fundus with the free hand little difficulty is experienced in extracting the portions retained. If there should exist any symptom of septic poisoning when the patient is seen for the first time, I always make use of frequent antiseptic injections, say, every two hours.

Concerning medicinal treatment, I may say that quinine is freely given, and sometimes along with it salicylate of soda. Where everything has been discharged, and bleeding continues, very satisfactory results have been obtained by the administration of tincture of steel and ergot. In conclusion, patience, I consider in such cases, will do less harm than meddlesome interference.—*British Medical Journal, March* 31, 1888, *p.* 682.

84.—ON THE DIAGNOSIS AND TREATMENT OF DISEASES OF THE ENDOMETRIUM.

By W. J. Smyly, M.D., Gynæcologist, City of Dublin Hospital.

I know of one method only by which the diseases of the uterine mucous membrane can be diagnosed with accuracy, and that is by the microscopic examination of portions removed by means of the curette. In the majority of cases a fairly correct diagnosis may be arrived at without resorting to the microscope, but not with certainty. When, for example, a medium-sized curette can easily pass into the uterus, and is there found to be freely movable in an enlarged cavity, and over a soft and velvety but irregular surface; and when its cutting edge is used long strips of hyper-plastic membrane come away, we should probably be correct in supposing the case to be one of fungous endometritis, but it might be one in which the decidua had been retained, or a simple or malignant adenoma; for the appearances of these to the naked eye present a very close resemblance to each other, but microscopically they differ very widely. Should only a few small shreds of thin membrane be obtained, even after very vigorous scraping, we believe the case to be one of atrophy, but could not tell to what variety of this condition it appertained. Small, friable, whitish particles are strongly suggestive of cancer, but even then the microscope will be necessary; and here we meet with the most important, and often I believe the most difficult, problem, namely, to determine with certainty from specimens obtained the malignancy of the disease. I must confess that I never have done this myself, but I do not think that during the four years since I have adopted this method such a case has come under my care. It has, however, been done by others; the uterus excised in consequence, and the diagnosis confirmed by the subsequent examination of the specimens obtained, and it is a very remarkable fact that, considering how few are the recorded cases of malignant disease limited to the body of the uterus, so many as eleven should have been diagnosed during the last seven years by a single individual, namely, Dr. J. Veit, of Berlin. This is to my mind strongly suggestive of the belief that a large proportion of such cases are not detected until after the disease has involved the cervix or the neighbouring organs, because of imperfection in the methods of diagnosis usually employed; and that were the curette and microscope used more systematically, we should more often succeed in discovering this terrible malady at a time when its removal would offer a reasonable prospect of permanent relief.

This method of diagnosis was introduced by Récamier about forty years ago, and it is from it that most of our knowledge of the disease of the uterine mucous membrane has been derived. He devised the curette by means of which he removed "*fongosités*," or vegetations, and subsequently applied some caustic to the de-

nuded surface. The particles removed were examined microscopically by Robin, who gave a very exact description of their structure, corresponding with what is now generally known as fungous endometritis. De Sinéty and Rugé have distinguished in the same way three distinct forms of endometritis, according to the relative development of the glands and inter-glandular tissue; but as all these forms may occur simultaneously in the same uterus, this division appears to be rather too artificial. If, however, Martin's opinion that the more the glandular development predominates, the more liable is the disease to assume a malignant character, and Wyder's that the more the interstitial tissue is developed, the greater is the hemorrhage, prove to be correct, then it will be a very important one.

Retention of the decidua after abortion is one of the commonest affections of the uterine mucous membrane. When examined microscopically it contrasts very strongly with fungous endometritis, owing to the absence of glands, and it will, I believe, always be found in a state of inflammation. Whether this is the cause or the result of its retention, I am unable to say; but, in either case, it indicates the advantage of its early removal. Of the atrophic forms of endometritis, two appear to me of especial interest—first, that described by Schroeder as dysmenorrhœal endometritis, in which there is a development of the inter-glandular tissue leading to the obliteration of the glands themselves, and a subsequent cirrhosis or atrophy of the membrane; and secondly, a condition described by Zeller as "psoriasis uterina," in which the uterine cavity is lined with scaly epithelium. I mention these forms especially, because it was by the microscopical examination of particles obtained by means of the curette that they were discovered. The curette and microscope are accordingly most efficient means of diagnosis, but their use is, in this country at least, generally regarded as advisable in exceptional cases only, and after the ordinary methods, by means of the sound and introduction of the finger after dilatation of the cervix, have failed. Now, as regards the latter method, it is not only more painful, and involves greater risk to the patient and a much greater expenditure of time on the part of the practitioner than curetting, but, what is of more consequence, it seldom yields much useful information. Only gross pathological changes can be distinguished by the finger, and in proof of this I would refer you to the writings of those who practise either method exclusively. There you will find that by those who advocate the curette and microscope not only are definite pathological conditions described and figured, but there is a remarkable unanimity in their opinions as to the nature of these conditions, whilst amongst those who do not employ them we find such vague and unsatisfactory terms as "granular conditions," "pulpy states," "irritable membranes," etc., expressing not the nature of the conditions present, but only the impressions which they conveyed to their fingers;

whilst in such conditions as are not palpable in this way only two courses are open to them, either to deny their existence altogether, or use some indefinite term such as "intra-uterine disease," without any attempt to define it more exactly. Let me quote an example from the work of such an eminent gynæcologist as Dr. Emmet, who speaks of the curette as "an instrument which has proved a most objectionable one;" and as regards the instrument of Dr. Sims, "he honestly believes that the ingenuity of man has never devised one capable of doing more injury." His knowledge, therefore, we may assume, has not been derived from the use of this instrument. He mentions four forms of disease to which the uterine mucous membrane is liable. First, a form of disease usually the result of pregnancy, and characterised by hemorrhage, which, he says, "is common but little understood, microscopists not having, to his knowledge, fully investigated the subject;" a second condition is frequently met with, "which some writer has compared to granular conjunctivitis;" and a third "resembles the pile of velvet, and when floated in water it seems to consist of prolongations of blood-vessels from the muscular tissue;" and lastly, "a thickened condition of the membrane, which could be easily detached in long strips like the skin which has been scalded, and is blanched in appearance." Now I would point out that in not one of these cases is the real nature of the disease described. In the first he says it is unknown, the second is like granular lids, the third like velvet, and the fourth like scalded skin; but what we want to know is, not what a disease is like, but what it is. What should we think of an oculist who described granular ophthalmia as a disease resembling decidual endometritis? I have selected Dr. Emmet's work in order to show that no matter how brilliant and observant a man may be, ignorance and confusion must result from the rejection of the only source of knowledge.

In spite of the obvious advantages of the curette as a means of diagnosis, its advance towards general acceptance has been but slow. Récamier's results were very brilliant, and although he perforated the uterus in a few cases, I believe that no evil resulted therefrom. However, its introduction met with such a storm of opposition that, in spite of the advocacy of Sir James Simpson, Olshausen, Marion Sims, and others, it made but little way until about four years ago, when a revulsion of feeling in its favour occurred. Certain dangers naturally suggested themselves as likely to follow its use, and especially that the mucous membrane having been thoroughly removed, it would be replaced by cicatricial tissue, and thus sterility would result. Reasoning from analogy we should expect this to occur, but analogy does not hold good in this instance. The uterine mucous membrane differs from every other in its rapid and complete regeneration, as was clearly proved by Dr. Martin, of Berlin. and his assistant Dr. Düvelius, and it was the publication

of the investigation of this subject by the latter which marked the epoch to which I have already referred, since which this method of diagnosis and treatment has rapidly gained in popularity. The most remarkable cases recorded by Dr. Martin were those of two women who had been repeatedly curetted and cauterised for adenoma of the mucous membrane; but were at last reduced to such an anæmic condition that as a last resource the uterus was removed. In one of these cases the last scraping took place two months, in the other four months, previously. The microscopic examination of the organs after extirpation showed that the newly developed membrane was related to the muscular and intermuscular connective tissue in the usual manner, nor was a cicatrix to be found anywhere in the mucous membrane, or between it and the muscle. Theoretically there is no reason why pregnancy should be interfered with, but on the contrary it should rather be favoured by the removal of a diseased membrane, and its replacement by another which we have every reason to hope may prove a healthy one. Now as a matter of experience this has been found to be the case. Dr. Düvelius found that out of the patients operated on by Dr. Martin and himself between 1879 and 1883, 60 were known to have subsequently become pregnant, and of my own cases I know of six, but as I could not trace all my patients, the number is probably greater. It is therefore evident that, no matter how thoroughly the curetting may be carried out, the membrane will be regenerated, that this new membrane is not cicatricial in structure, and that the operation favours rather than hinders the occurrence of pregnancy.

Let us now consider the treatment of these diseases. The chief indications are, first to remove the diseased membrane as completely as possible, and then endeavour to induce a healthy growth in the new one. These two indications are best fulfilled by the use of the curette, and by subsequent injections of strong solution of iodine or iodised phenol. Why should we spend months and years in making applications to a membrane which may be removed in a few minutes, with the certainty of its being speedily replaced by at least as good, but probably a better one? That the new membrane may be diseased is true, but this objection will apply to every form of treatment, and speaking generally we may say that the success which has attended any therapeutic agent has been in direct proportion to its power of destroying the diseased membrane. This explains to us the marked benefit derived from the use of powerful caustics, especially the fuming nitric acid. In Dublin we have had remarkable success with this agent, but it is inferior to the curette in three ways. 1. It necessitates previous dilatation of the cervix. 2. Its action is rendered uncertain by hemorrhage and other discharges. 3. It destroys the tissues upon which we depend for diagnosis. My present practice is to curette in every

case of disease affecting solely or chiefly the uterine mucous membrane, which does not yield to attention to general health, douching and astringents, and I can strongly recommend it to others as having the following advantages, which I may briefly recapitulate. (1) It is efficacious both as a diagnostic and as a therapeutic agent; and (2) its employment is safer and simpler than any method which involves the dilatation of the cervix.—*British Med. Journal, Feb.* 11, 1888, *p.* 288.

85.—ON THE PREVENTION OF PUERPERAL FEVER.

By W. S. Playfair, M.D., F.R.C.P., Professor of Obstetric Medicine in King's College, and Physician to the Hospital.

In the first place, if we wish to prevent puerperal septicæmia we must have an intelligent idea of what it is, how it originates, and how it may be conveyed to the patient. Unless we are agreed on these points, we are not likely to come to any definite conclusion of value. I take it to be now almost universally admitted that puerperal septicæmia is practically the same thing as surgical septicæmia, a disease caused by poison absorbed through the genital tract into the system of the patient, which poison may either originate in her *de novo* from the decomposition of some of the organic matters resulting from child-birth, such as coagula, lochial discharge, and the like, or which may be conveyed to the patient from without by septic matter being brought into contact with her, as through such channels as foul sponges, infected hands of practitioners or nurses, or suspended in the atmosphere, as in rooms into which sewer gas finds its way. This I believe to be as short a summary of the most recent theory of the disease as can be framed. If it is correct, then what we have to do is to prevent the poison being formed in the patient, or being conveyed to her; and, in addition, we have to manage her so that if by chance the poison is brought into contact with her, the chances of absorption should be reduced to a minimum. Now the latter indication is to be secured by closing as much as possible the channels through which septic matter is most apt to be absorbed, and this is to be done by effecting strong and permanent contraction of the uterus, and by lessening absorptive surfaces offered by perineal lacerations and the like. I have reason to think that neither of these points is sufficiently attended to in ordinary practice. How customary it is to find the binder hurriedly applied before firm and continuous contraction is secured, the uterus remaining under it, large, flabby, and distended with clots, which happily are generally expelled without harm by severe after-pains, but which may, and often do, decompose *in utero*, and set up septic mischief.

That it often does arise from such a source is abundantly proved by the far from uncommon cases in which a single thorough anti-

septic intra-uterine irrigation will wash away the *fons et origo mali*, bring down the temperature, lower the pulse, and cut short the threatening storm which has already set in.

The practice I myself follow and teach to lessen danger from this source is never to remove the hand from the uterus for at least twenty minutes after the expulsion of the placenta, and during this time to keep up continuous, but not rough, friction or kneading, so as to prevent uterine distension, and stimulate the muscular fibres to contract. I believe it also to be thoroughly good practice to administer at this time a large dose of ergot, or of some of its preparations; and if contraction after this is not good, to give a hypodermic injection of ergotine or ergotinine. I am aware that high authorities object to the administration of ergot as a routine practice after the third stage of labour is completed. Personally, I have never seen any harm follow its use, and as persistent tonic muscular action is what we now desire, as we desire intermittent action before delivery, and as the property of the drug is certainly to favour this, I have never been able to understand why it should not be administered.

Next, as to the closure of lacerations. The old teaching on this point certainly has been, and the general custom certainly is, that perineal lacerations, unless considerable, and extending back nearly to the sphincter, or through it, need not be closed by sutures. I believe this to be a grave mistake. I think that the rule should be absolute that the perineum should be inspected after labour, and that every tear, more than a slight laceration of the fourchette, should be closed with catgut or wire suture, after thorough cleansing, with perchloride of mercury solution, and subsequently dusted with iodoform night and morning. By this any chance of absorption through the bared perineal surfaces is avoided, and complete healing is ensured.

The most important point, however, to be considered, is the antiseptic precautions by which we are to prevent contagion from without being brought into contact with the patient. Here, indeed, is the very essence of the whole matter, for I have no doubt in my own mind that the vast majority of cases of puerperal septicæmia arise from poison conveyed directly to the patient from some preventable accident. It is not a pleasant reflection this to any medical man, but the more thoroughly we look unpleasant facts in the face, the better shall we be able to deal with them. Nothing is to be gained by the ostrich-like policy of supposing we can alter facts by denying them. Now, as to the medical man, is it not the case that the nature of his work of necessity brings him perpetually into contact with septic matter? If he is in general practice, he cannot avoid perpetually handling all sorts of cases, dressing wounds secreting pus, and the like. There is no possibility of getting out of it—it is his daily work, and what he has to do is to

recognise the risk, and take the precautions happily at our disposal to reduce the risk to a minimum, or annihilate it altogether. The patients of the man who sees and acknowledges the danger I honestly believe to be safe. The special obstetrician, if he has much gynæcological work, is in a worse case still. He has in constant vaginal examinations perpetually to imbue his fingers in discharges which may be of the utmost possible virulence, such as of uterine carcinoma. How many of us practising in this way have escaped without infecting ourselves through punctured wounds in our fingers. Very few, I imagine; and if we thus infect ourselves *a fortiori* may we not infect others?

If I dwell on unpleasant topics such as these, my only object is to secure a thorough appreciation of their danger and its avoidance. But it would be most unjust to assume that the hands of the medical man are the only, or even the most common, source of danger. I honestly believe that many and many a case of septicæmia has originated in the nurse. It may be that the medical man is brought more in contact with infective material, but he may be trusted at least to do his best to avoid the danger when he realises it, and, moreover, he is only in actual contact with the genital tract at the time of labour. The nurse, however, is constantly handling the genitals at all hours for many days in succession. Moreover, it is unfortunately the case that many of the older class of nurses persistently set themselves against antiseptic precautions as "new fangled fads which they don't hold with." If they are positively ordered to carry them out, they are apt to do so in the most perfunctory way. The tips of the fingers are just dipped in the antiseptic lotion. A sponge is used for wiping the genitals, and is put away unwashed, or most imperfectly washed, on a hot summer's day. Quite lately I had occasion to use a catheter, and not having one, the nurse produced one belonging to her. I pushed out of the eye a decomposing blood clot, which had been lying there for days or weeks. Again, not long since, I saw a most intense case of septicæmia; the nurse assured me that she had been most careful, and yet I found an under sheet unchanged for four days saturated with decomposing lochia, on which the patient was lying. In a hundred unsuspected ways such as these, quite beyond the control of the medical man, death may be conveyed to the patient.

If, however, efficient antisepsis is to be carried out, the rules must be such as the nurse can understand, and such as are not too complicated and troublesome to put into execution. I have here some cards which I have had printed for the use of my own nurses, and the rules they inculcate are quite easily attended to, and give so little trouble that I have never found any serious objection made to them. They are legibly printed, as you will observe, on a stout card, which can be placed on the chimney-piece, one of which I give to every nurse in attendance on cases under my charge.

Antiseptic Rules for Monthly Nurses.—1. Two bottles are supplied to each patient; one contains a solution of perchloride of mercury, of the strength of one part to one thousand of water, tinted with litmus (called the 1 in 1,000 solution), the other carbolised oil (1 in 8).

2. A small basin containing the 1 in 1,000 solution must always stand by the bedside of the patient, and the nurse must thoroughly rinse her hands in it every time she touches the patient in the neighbourhood of the genital organs, for washing or any other purposes whatsoever, before or during labour, or for a week after delivery.

3. All sponges, vaginal and rectal pipes, catheters, &c., must be dipped in the 1 in 1,000 solution before being used. The surfaces of slippers, bed-pans, etc., should also be sponged with it.

4. Vaginal pipes, enema tubes, catheters, &c., should be smeared with the carbolised oil before use.

5. Unless express directions are given to the contrary, the vagina should be syringed twice daily after delivery with warm water, with a sufficient quantity of Condy's fluid dropped into it to give it a pale pink colour.

6. All soiled linen, diapers, &c., should be immediately removed from the bedroom.

N.B.—These rules are for protecting the patient from the risk arising from accidental contamination of the hands, sponges, &c. It is, therefore, hoped that they will be faithfully and minutely adhered to.

Now there is nothing complex, I think, in this; nothing that any nurse of the most ordinary intelligence should find it difficult to carry out. The details may, of course, be varied considerably as to the form of antiseptic employed, and the like. It is the principle of antisepsis, more than the details, which it is important to recognise. Personally, I prefer the perchloride of mercury to any other antiseptic, not only because of its acknowledged potency, but because of its being bland and unirritating to the skin, and capable of being carried in a concentrated form in the obstetric bag, so that the antiseptic lotion can readily be made at a moment's notice. I find that nurses will not use a carbolic lotion, or use it most inefficiently, because of its tendency to chap and roughen the hands, while I have never known them to object to the mercurial solution. It will be observed that I do not recommend it for vaginal injections after labour, because of a few cases of mercurial poisoning that have been reported to follow its use in this way.

There are, in addition, a few precautions to be used during the labour which the practitioner should himself see to.

1. Before making any examination, or using the antiseptic lotion, he should thoroughly cleanse his hands with soap and water, being especially careful as to his nails, about and under which septic matter may easily lurk.

2. At an early stage of the labour the vagina should once be thoroughly syringed with the antiseptic lotion, and the vulva sponged with it.

3. When the head is distending the perineum the external genitals should again be sponged with the lotion.

4. Cold cream, lard, &c., should not be used for lubricating the fingers, and carbolised oil or vaseline should be employed.

5. When possible, sanitary towels should be used to receive the lochial discharges in preference to diapers, as they may be burned when soiled. All risk from imperfectly cleansed diapers is thus avoided.

I do not think that these suggestions impose on the practitioner a burden grievous to be borne, or call upon him to do anything which, having the interest of the patient at heart, he should for a moment hesitate about.—*British Medical Journal, Nov.* 12, *p.* 1035.

86.—ON THE PREVENTION OF PUERPERAL FEVER IN PRIVATE PRACTICE.

By John W. Byers, M.D., Physician for Diseases of Women to the Royal Hospital, Belfast.

Believing that puerperal fever is a form of blood-poisoning or septicæmia, and looking at the results obtained in maternities by the routine use of antiseptics, the question naturally arises what are the sources in private obstetric practice from which the poison which gives rise to the disease may be conveyed. Setting aside for a short time the question of auto-infection, we believe the channels through which puerperal fever may be conveyed are three.

1. It may arise through defective sanitary arrangements in the house where the confinement occurs.

2. It may be conveyed by the nurse.

3. Finally, the accoucheur may himself be the means of carrying the disease. We shall say a few words about each of these sources of the infection, and indicate the means by which in each case we may prevent the puerpera being affected.

(1.) We think the teaching of Dr. Playfair (Lancet, February 5th, 1887), as well as the practical experience of many others engaged in obstetric practice, have made it evident that puerperal septicæmia, identical in its symptoms and course with that which arises from other causes, may owe its origin to sewer-gas; hence it is of the greatest importance that the house in which a confinement is about to occur should be thoroughly put right, in a sanitary point of view, before that event. If we had proper legislation on sanitary matters, such precautions would be unnecessary, or if even people would take the trouble of getting a properly qualified authority to examine the drainage and plumbing of a house they are about to live in, before they enter, many serious illnesses would

be avoided. We know that many hold that the only channel through which the poison of puerperal septicæmia of one recently confined is through wounds in the genital tract; but if diphtheria, enteric (typhoid) fever, and certain forms of sore-throat can arise from the foul air of the sewers, why cannot puerperal septicæmia take its origin from the same source? Further, it is of importance that the lying-in chamber should be properly ventilated.

(2.) *The Nurse.*—If all monthly nurses were thoroughly taught to believe in the contagiousness of puerperal fever, and if rigid antiseptic precautions were used in all those lying-in hospitals in which they receive their training, we feel sure they would soon come to see the immense importance of extreme cleanliness, and look upon the routine of the antiseptic methods not as a drudgery, but as an absolute necessity. A nurse who has an enthusiastic belief in strict antiseptic measures, is worth a dozen who simply carry out the precautions in a mechanical way. I have drawn up the following rules for the guidance of nurses.

Rules for Monthly Nurses.—1. No nurse who has recently attended a case of puerperal fever, or who has been brought in contact with anyone suffering from scarlatina, erysipelas, sore-throat, or any infectious disease, should commence attendance on a new case without, in the first place, communicating with the doctor, so that precautions may be taken to prevent the spread of infection.

2. No nurse should touch, or make any application whatever to a patient without first thoroughly washing her hands in soap and water (using the nail-brush), and then rinsing them in the corrosive solution.

3. She will be provided with two solutions. *a.* Corrosive sublimate. ℞. Hydrarg. perhlorid. gr. 154; glycerini ʒii; Sig. corrosive solution; of this, one teaspoonful added to a pint of water forms the solution 1 in 1,000 for rinsing the hands. *b.* Carbolic solution. Two tablespoonfuls added to a pint makes a 1 in 20 solution. On the wash-stand she will place a large basin with water, soap, and a nail brush, and a smaller one with the corrosive solution for rinsing the hands. On the same table there should also be placed a small bottle with sublimated vaseline (gr. ii, and ʒj), or a pomade with one part of oil of encalyptus to seven of vaseline. N.B.—All these will be ordered by the medical attendant.

4. Before making an examination (and this should be done as little as possible), the nurse having first washed her hands, and then passed them through the corrosive solution, shall smear the finger with the antiseptic vaseline.

5. All catheters (if necessary), vaginal tubes (glass), syringes, sponges, &c., shall, when not in use, be kept in a 1 in 40 carbolic solution (one tablespoonful added to a pint of water), and the

instruments before being used shall be taken out of this solution, and greased with the antiseptic vaseline, and after being used shall be thoroughly washed, and then replaced in the 1 in 40 carbolic lotion.

6. All diapers or other articles when used shall be removed out of the room as soon as possible. All utensils employed, after having been washed, shall be rinsed in the carbolic antiseptic solution.

(3.) *Rules for the Accoucheur.*—The medical attendant should adhere to all those precautions laid down for the guidance of the nurse. He should make as few examinations as possible, and he should be most careful in his management of the third stage, that is, to follow down the uterus during the birth of the child's body, and to express the placenta, and then to keep up firm pressure for some time before putting on the binder. Further, it is a most useful precaution, as against the introduction of air, to make the patient lie on her back as soon as the child is born; a firm application of the binder acts in the same way. If there is any laceration of the perineum it should be stitched. The plan I like best is to place some lint soaked in the antiseptic solution in the vagina, then carefully to use a hot sublimate douche to the parts, and stitch the torn edges by means of a curved perineum needle and silkworm gut. In this operation the best position for the patient is the dorsal one. Hartmann's sublimate wood-wool diapers are, I think, better than ordinary napkins rung out of antiseptic solution. When the perineum is being dilated, its stretching may be facilitated by employing a sponge wrung out of hot (1 in 40) carbolic lotion, and by lubricating it with the antiseptic vaseline. We think, with these precautions, it is not necessary to give an antiseptic vaginal douche before the child is born, unless the labour is very tedious, and there is considerable pressure on the soft parts. In such circumstances, a 1 in 40 carbolic douche should be used. It is worth noting, in reference to this matter, that puerperal septicæmia is not common when the labour is an easy one, and according to Winckel, it is very uncommon in rapid confinements. All these measures have as their object to prevent the entrance of any poison into the system either before or during the labour. What should be our plans after the confinement?

a. Question of Douches.—I must say I think the use, twice a day, of a hot vaginal (1 in 40) carbolic douche is most grateful to the patient, and tends to keep the parts pure and clean, but it should only be given by a nurse who will adhere to all the rules we have mentioned. I think the sublimate douche should be reserved for cases in which the hand has been introduced into the uterus (operative midwifery), or in which, from something decomposing in the womb, there is a fœtid discharge. In such cases, a hot sublimate douche (1 in 2,000) used by means of a glass uterine

tube, is most beneficial. We think, as undoubtedly there is risk attending the use of the sublimate solution, it should only be used by the medical attendant; the routine vaginal douches employed by the nurse can be rendered antiseptic with carbolic acid. Further, in using the sublimate solution, care should be taken by pressure with one hand above the uterus, and by holding the perineum back with the other, to avoid leaving any of the fluid behind.

b. Position of the Patient.—After labour, for a few days she is best kept on her back, and in passing water she should use the knee-elbow position, which will facilitate the drainage of the vagina. To aid in the contraction of the uterus some recommend giving after labour a mixture of ergot, digitalis, and quinine. I have used this combination with advantage.

The above precautions are based upon the view that all cases of puerperal septicæmia are in their origin heterogenetic, that is, the infection comes from without; but of course many hold that in certain cases the disease may originate within the patient's body, or be autogenetic. This type of case is well described by Dr. Macan in his Report of the Rotunda Hospital for 1883. "In cases of auto-infection, the woman is most frequently a multipara, the labour long, and perhaps complicated with a dead and putrid fœtus, or with fibrous tumour or cancer of the uterus, or there has been a post-partum hemorrhage from a badly contracted uterus, followed by the formation of clots, or the retention of portions of the membranes or placenta. The uterus being badly contracted, and the abdominal walls very relaxed, air enters the vagina, and decomposition of the contents of the uterus is the result." In such cases, if the fluid does not get away, it undergoes further decomposition, becomes absorbed, and poisons the patient; but on the other hand, thorough drainage and washing out the uterus with a hot 1 in 2000 sublimate solution, if done early enough, will generally cause the bad symptoms to disappear. But even in such cases, may the cause not come from without, the intra-uterine clots, dead fœtus, placenta, etc., forming a medium in which the micro-organisms from without find a soil in which they can rapidly grow and multiply?

In those cases, so well portrayed by Dr. Macan, in which some hold the disease arises within the patient's body, and in which, a few days after delivery, the temperature rises, with or without a fœtid discharge, I have had admirable results from washing out the uterus with a hot sublimate douche followed by the insertion of one of Ehrendorfer's iodoform bougies; in other words, providing drainage for pent-up secretions, and rendering the parts aseptic.

In connection with obstetric practice, the question is being frequently debated in the medical journals, "How soon after being

exposed to an infectious disease may a practitioner take charge of a confinement?" My own opinion is that a thoroughly conscientious man may, after having attended an infectious case, if he change all his clothes, if he take a warm bath, and if he use most rigidly the antiseptic methods, soon resume obstetric work. Those who employ the antiseptic precautions will feel they have used every means to prevent the carrying of the contagion to their patients.

It has been said that the best way to prevent post-partum hemorrhage is to act in every case as if its occurrence was imminent; as a result, those who now manage the third stage of labour in accordance with modern obstetric teaching have few cases of this complication. May I suggest, in conclusion, if in our midwifery practice we regard puerperal septicæmia as likely to develop, in every case we ought to take all precautions: first, to prevent the poison (be it micro-organism or not) reaching the patient; and, secondly, to destroy the poison if it comes in contact with the patient before it enters her blood and tissues. This is the aim of antiseptic midwifery.—*British Med. Journal, Nov.* 12, 1887, *p.* 1043.

87.—ON THE BEST METHOD OF TREATING EXTENSIVE VESICO- AND RECTO-VAGINAL FISTULÆ.

By William Duncan, M.D., M.R.C.P., Assistant Obstetric Physician and Lecturer at the Middlesex Hospital.

Fortunately, nowadays, owing to the more skilful and frequent application of the forceps, bad cases of vaginal fistulæ are not often met with; when, however, extensive sloughing of the vagina does take place, the condition of the unfortunate patient is a deplorable one, and the cure exceedingly difficult. I propose in this paper to somewhat briefly relate two cases which have been under my care, and then to discuss the method of treatment.

Case 1.—*Extensive Sloughing of Vagina producing Recto- and Vesico-Vaginal Fistulæ; Transplantation of Flaps: Cure.*—Mrs. B., aged 26, admitted into hospital on September 6th, 1883. She was delivered of her first child (which was stillborn) twelve weeks previously after a very difficult and prolonged labour. The patient says she had two doctors, who used instruments several times during three days before they could deliver her. From the time of her confinement the patient had passed her urine and fæces through the vagina.

On admission, the patient was a small woman, with a generally contracted pelvis. She looked very ill. Projecting through the vulva was a soft vascular mass, which proved to be the inverted bladder. The whole of the anterior vaginal wall had sloughed away close up to the cervix uteri; below there was half an inch of the urethra left; the tissues on the left side were adherent to

the bony pelvis; the posterior vaginal wall was composed of dense cicatricial tissue, and in it, at a distance of two inches from the anal orifice, was a fistula, the size of a florin, opening into the rectum; the perineum was torn to the sphincter ani; the labia and surrounding parts were excoriated from the constant dribbling of urine.

September 17th. Careful examination under ether showed that after making incisions into the dense cicatricial bands, it would be absolutely impossible to bring the edges of either rent into apposition. I therefore determined to endeavour to close them by means of flaps, marked out a flap on the left side of the vagina, with its lower end on the inner surface of the left labium majus. The flap measured one inch and three-quarters in length, and one inch in breadth. It was dissected up as thickly as possible, but left attached at both extremities in order to ensure its vitality; carbolised lint was packed under the flap.

October 5th. Eighteen days after the formation of the flap, the patient was placed under ether. The edges of the opening into the bladder were first freshened; then the lower extremity of the flap was cut across; it was raised up, and fitted into the right side of the opening, with the vaginal mucous surface turned towards the bladder; it was secured by silver wire sutures fastened with coils and shot, and the edges of the rent at the left side were approximated and fastened in a similar manner. By this means the whole rent appeared securely closed, and there was no leakage when milk was injected into the bladder. A self-retaining, soft india-rubber catheter was introduced into the bladder, and a morphine suppository into the rectum.

October 16th. The patient was placed in the lithotomy position, and all wire sutures were removed; there was perfect union, except at three points, namely, in either corner, and in the centre where the remaining portion of the urethra was joined to the edge of the flap. The temperature was normal.

November 10th. Under ether the edges of the three small openings were freshened, and brought together with silver sutures. A self-retaining catheter was placed in the bladder. The patient was ordered to lie on her right side.

November 14th. A very slight leakage was noticed this morning.

November 17th. The sutures were removed; two of the openings were closed, but that in the left hand corner, which was situated in the midst of dense citatricial tissue, was still pervious.

November 23rd. She got up daily. There was no pain on rising from the chair. She could walk with assistance. There was some loss of control over the bladder, as some urine escaped by the urethra; the leakage through the pin-hole was slight.

On January 5th, 1884, her general health was much better; there was much cicatricial contraction of the vagina, which hid

the pin-hole opening into the bladder. Three unsuccessful attempts to close this pin-hole were made on January 12th, February 2nd, and February 21st. So the patient was again sent out for some months.

She was readmitted on September 7th, and, on the following day, another attempt was made to close the fistulous opening into the bladder.

September 18th. The fistula was quite closed.

October 3rd. The patient having been put under ether, in order to close the recto-vaginal fistula, a flap (one inch and a half long and one inch wide) was made on the right wall of the vagina, in a similar manner to the other one.

October 10th. Under ether, the lower end of the flap was cut across; the edges of the fistula were pared with difficulty, as the cicatricial tissue was very hard; the flap was fixed to the margin of the opening by means of silk and catgut sutures.

October 17th. The stitches were removed; union was perfect.

November 2nd. The patient was discharged cured.

Case 2.—Extensive Sloughing of Anterior Vaginal Wall: Vesico-Vaginal Fistula: Closure of Vagina by Simon's Method: Cure.—Mrs. F., aged 22, was admitted into the hospital on July 1st, 1886. She was confined seven weeks ago of a male child, when, she says, she was attended by a midwife; and, for seven days after the membranes ruptured, had frequent and strong labour pains. A medical man, who was then sent for, perforated the child's head, and delivered with forceps. Directly after delivery, and up to the time of admission, the urine had escaped through the vagina.

July 20th. On examination, there was much lordosis of the spine; the tibiæ were curved from old rickets. *Per vaginam*, there was a large vesico-vaginal fistula, the base of the bladder having completely sloughed away, up to the cervix uteri and down to within one inch and a half of the urethral orifice. There was much cicatricial contraction of the vagina, especially at the upper part, so that this canal was somewhat cone-shaped, and at the apex could be felt the os uteri.

September 9th. The patient having been etherised, and placed in the Sims's position, the posterior and right lateral vaginal walls were held aside with retractors. Several incisions were made into the cicatricial tissue; but, after careful examination, it was found that it would be impossible either to bring the edges together, or (as in the preceding case) to transplant flaps. It was, therefore, decided to perform Simon's operation of closing the vagina. A circular strip of the vagina (half an inch wide) was denuded, taking in the lower margin of the rent, but being an inch higher up posteriorly; the bladder and vagina were then thoroughly irrigated with a 1 in 40 carbolic solution, and the denuded surfaces brought carefully into apposition by means of wire sutures clamped

with coils and shot. A self-retaining india-rubber catheter was inserted into the bladder, and a half-grain morphine suppository into the rectum. The patient was made to lie as much as possible in the prone position; the vagina and bladder to be irrigated night and morning with a 1 in 40 boroglyceride solution; and a one-grain opium pill to be given three times a day.

September 10th. All urine came through the catheter. She said she felt more comfortable than she had done since her confinement.

September 20th. All stitches were removed; perfect union had apparently taken place. The catheter was ordered to be still kept in, and the irrigation night and morning to be continued.

September 23rd. The catheter was removed, but ordered to be passed every eight hours.

October 8th. Urine had escaped through the vagina both yesterday and to-day. On examination, a minute opening was seen in the upper part of the vagina, through which urine constantly dribbled. The edges were freshened and brought together with silver wire. The further progress of this case is interesting. There has been no leakage; the union is perfect; but, during the patient's stay in the hospital and ever since she went home, she has suffered acute pain, of several hours' duration, in the lower abdomen, accompanied by rise of temperature to 101° or 102° at each menstrual period; but, in the intervals, she feels perfectly well.

July 15th, 1887. The patient came to see me to-day, looking fat and well. She said her only trouble was the pain from which she suffered at each period. On examination, there was a vagina of rather more than two inches in length posteriorly and one inch and a half anteriorly. She was able to retain her urine for several consecutive hours without trouble.

Remarks.—The treatment of extensive vaginal fistulæ by the transplantation of flaps was first described by Jobert de Lamballe in 1834, who dissected a flap from one buttock. Velpeau and Leroy d'Etiolles improved upon this by taking the flap from the posterior vaginal wall; but, as far as I can gather, when fistulæ have been treated in this way, the flaps have been utilised directly when made. Now, by doing so, it is evident that many cases must of necessity fail, as we cannot take up a sufficient thickness of tissue to ensure its vitality; if, however, the flap is left attached at both ends for a week or more, as was done in Case 1, it becomes greatly thickened, so that when, at a later operation, it is brought into apposition with the edge of the rent, it will, I feel confident, in the vast majority of cases, readily unite. It is, then, to this method of treating extensive fistulæ by the transplantation of flaps *en deux temps*, that I specially desire to draw attention.

I cannot agree with Thomas when he writes on the subject as follows (in his Diseases of Women, fifth edition, p. 259): "The difficulties and uncertainties attending it (that is, elytroplasty),

together with the fact that more simple and efficient methods for dealing with this class of cases are at command, have rendered a resort to it very rare." What, let me ask, are the more simple and efficient methods which I could have adopted in the two recorded cases? The only method seems to me the one which I was reluctantly compelled to have recourse to in Case 2—namely, closure of the vagina. Now, this operation is undoubtedly a more simple one than that of transplanting a flap; but, let us contrast the ultimate result! In Case 1, had the poor woman not been carried off, unfortunately, by an attack of pneumonia, after she had been discharged cured, she would not only have been able to menstruate through the vagina, but also to have resumed her marital relations, and even to have borne children; whereas Case 2 (a young married woman, aged 22) is practically debarred from sexual relations for the remainder of her life; but what is of far more importance, she is incurring grave risks from those periodical attacks of severe pain, with pyrexia; so that I am seriously contemplating whether removal of her ovaries and tubes is not only justifiable, but positively called for.—*British Med. Journal, Oct.* 29, 1887, *p.* 936.

88.—ON THE RESULTS OF SUPRAVAGINAL HYSTERECTOMY, WITH REMARKS ON THE METHODS OF TREATING UTERINE FIBROIDS.

By Thomas Keith, M.D., F.R.C.S.E., Surgeon for Ovarian Diseases, Royal Infirmary, Edinburgh.

I have already published in detail every case of supravaginal hysterectomy performed by me till the end of 1884. The mortality was 7·9 per cent. I have also given every case in which I have in any way interfered with a uterine tumour by abdominal section. No one has done this but myself. With the exception of a case of very large solid tumour, probably uterine, in a girl of 16, operated on in hospital for Dr. Skeen, of Brooklyn, the list of hysterectomies is carried down to date.

The mortality is greater than before, and it differs much in hospital and private work. In this series all patients operated on outside the hospital recovered; the fatal cases were all in the hospital. Of the whole series of sixty-four cases, twenty-six were private cases, with a single death (3·8 per cent.), and that patient died of acute mania. Of thirty-eight hospital patients, six died, or 15·7 per cent. In the private cases the tumours were larger; for private patients, being more able to take care of themselves, do not need interference so soon. They were also much more drained by hemorrhages, and were altogether in a less satisfactory and more anxious state than the majority of the hospital cases. I may here mention that, in ovariotomy, the same great difference obtains between private and hospital practice. In the first three years of

hospital work, when everything was fresh and new, the mortality after all operations—not including spray cases—was under $2\frac{1}{2}$ per cent. Since then, that is, during the last three years, erysipelas was conveyed into the rooms, and has broken out three times. Pneumonia, which seems to be endemic, has appeared three times. The mortality has risen from under $2\frac{1}{2}$ to $5\frac{1}{2}$ per cent. It is but fair to say, however, that the number of severe and advanced cases of ovarian tumour continues, and that patients are, as a rule, not sent in an early stage, as they seem to be elsewhere. During more than these three years, a single death from diabetic coma, following a simple ovariotomy, which was rather advised against, sums up the whole mortality in private practice. All these operations were performed in crowded hotels, private houses, or ordinary lodgings.

Of the whole number of hysterectomies, five suffered from acute mania. When the attack followed quickly on the operation, the patients died; coming on later during the convalescence, recovery took place. A sixth, a young woman who was operated on at 19, was brought to me some years after thin, morose, and useless. Such a number of cases of mania following this operation cannot be an accidental circumstance.

The average time of convalescence in the extra-peritoneal cases was forty-one days; of the intra-peritoneal method, three weeks. There was no death either in hospital or private practice when the intra-peritoneal method was followed out, and I am satisfied that the best results in hysterectomy will be got by the ligature. Though a more surgical, this is a more difficult way, and much care is needed in tying the vessels in the treacherous tissue with which we have to do. The principle of the extra-peritoneal treatment may seem to be the better, considering the amount of tissue that has to be left inside; but on this point experience has made me change my mind. We owe much to the extra-peritoneal or clamp method, for it was to the faithful carrying out of this principle by Sir Spencer Wells that ovariotomy was established as a legitimate operation; and though it did not at first give the best results, just as it is not now giving the best results in hysterectomy, this was mainly because in those days the means at our disposal were insufficient to disinfect the stump. These things are apt to be forgotten.

The tumours removed were smaller than before, and in all the fatal cases the operation was begun with the intention of removing the ovaries only. It was impossible to find them or to remove them sometimes even after the tumour was turned out. In two, where omental adhesions were separated, and in another, where a rent in the substance had taken place on the tumour being got out of the pelvis, bleeding from the surfaces was such that there was no help for it but to go on. The proper practice where the ovaries cannot be entirely removed in cases of moderate-sized fibroids is to

close the wound; for, though we may be warranted in advising a patient to run a small risk in getting the ovaries away, we are not justified in at once putting her into the risk of hysterectomy without her full consent. I regret much that I did not close the wound in Case 59, where the local conditions were not favourable for hysterectomy performed in a surgical hospital. Since then I have done no case of hysterectomy in the hospital; the only hospital case where interference was necessary was operated on in a lodging in August last. It was probably the most difficult operation I ever performed. The hemorrhage from the bottom of the pelvis and side of the rectum was almost uncontrollable, and she nearly died on the table. Fortunately she was treated intra-peritoneally, and was going about in three weeks. A number of others have undergone or are now undergoing Dr. Apostoli's treatment. No one has suffered from the delay. Indeed there is rarely any hurry in interfering with uterine fibroids by operation.

I say it deliberately, hysterectomy is an operation that has done more harm than good, and its mortality is out of all proportion to the benefits received by the few. What is the mortality of this operation, now so often and so unnecessarily performed? We shall never know. I put it at 25 per cent., though it is probably much higher. I may be wrong; others can correct me by giving their total results. In other words, one out of every four women operated on by hysterectomy has till now died after an operation for the removal of a tumour that has, as a rule, a limited active existence, and that of itself rarely shortens life. We have no right to rush our patients into such a fearful risk, yet this is done every day. In abdominal surgery responsibility seems to have become old-fashioned and gone out of date.

When the whole stroma of the ovaries can be removed, the proceeding is so simple that it is scarcely worth calling it a surgical operation. Unfortunately, there are exceptions. When the ovaries are too close on the tumour, or when they are buried in the broad ligaments deep in the pelvis, or drawn behind the tumour, and cannot be satisfactorily removed, then failure is certain. The patient has the misery of the operation for nothing; the hemorrhages and growth go on as before. In every case where the ovaries have been entirely removed the cure has been perfect; cessation of growth and stoppage of menstruation have been the invariable results. In two cases of imperfect removal no good whatever followed; one of these has since, I may say, been perfectly cured by Apostoli's treatment; the other is now being treated in the same way. In two others, where the ovaries were removed, where part of a large submucous fibroid was projecting into the vagina, enucleation had, after all, to be performed, with successful results. The ovaries might thus have been spared in these two cases, and one of the patients bitterly regrets every day her loss of them.

Enucleation has given me the smallest mortality of all the various methods for the relief of uterine fibroids. Indeed, on only two occasions has death followed this operation, and I have performed it a great many times. It is to my mind the most difficult of all operations on the uterus. In the first of the fatal cases, the mass, removed in pieces, weighed seven pounds; slight sloughing had begun after many previous attempts to remove the tumour before I saw her. There was hemorrhage an hour after I left, and she died a week after of septicæmia. In the other, a patient sent by Dr. Cruickshank, the tumour enucleated was not larger than a child's head. She was perfectly well on the third day, when the antiseptic plugging was removed, then died suddenly of septicæmia. I did not know till long after that she lay on a bed on which a patient had just died of pyæmia. The room had been papered afresh, and the carpet and mattress were new, but the blankets had not been washed. I mention these two deaths after enucleation, for the general impression seems to be that this is the most dangerous of all the methods for removing uterine tumours. I have not found it so. There is a secret in the doing of it, for it is an obstetric operation that may be performed with all the apparent roughness of a craniotomy. It is a difficult and delicate surgical operation, requiring a thorough knowledge of scissor work, such as experience in vaginal plastic operations can give. Then it must be completed at one determined operation. If the os uteri be not open enough, it must be freely divided, and the parts afterwards united by suture. The most rigid antisepsis is essential. It requires greater care, greater patience, and greater endurance than any operation I know.

Fortunately for those afflicted with uterine tumours, it now matters little which of the old ways of operation is the best; whether the ovaries can be removed or not, whether the extra- or intra-peritoneal method be the better way of performing hysterectomy, or whether the convalescence lasts in the one case six weeks, or in the other twenty days, the treatment introduced by Dr. Apostoli must take precedence of all others. The success of this treatment is a great fact, and in saying that I accept *toto animo* his teachings, I do not speak without some experience of his practice. We have have already—my son and I—in scarcely five months, applied electricity in strong, accurately measured doses upwards of 1,200 times, in considerably over a hundred patients, the majority in cases of uterine fibroids. The labour has not been small—indeed, it has been very hard—and it is not easy to get the science of the subject into an old head. On the other hand, it has opened out a delightful study, which increases in interest every day the deeper we get into it. When I came back from my holiday in the beginning of July, there were waiting for me several cases of hysterectomy or for the removal of the ovaries for bleeding fibroids, and there

have been others since. These have all gone home without operation, with menstruation almost normal, and improving after their return, with the tumours in every case reduced in size, with pain gone, and with a freedom to walk about and enjoy life such as they were long strangers to. In one case only has there been a return of hemorrhage. The tumour had gone down two-thirds, she was apparently well, and, unwilling to detain her longer in town, she was allowed to go home too soon. All were more than pleased to have escaped the risks and miseries of a surgical operation that at once put their lives in peril. We—every one of us—consider far too lightly the misery that such operations cost our patients and their friends.

Should these improvements be permanent (and we have Dr. Apostoli's word for it that if the treatment be carried out long enough such is generally the case, and, so far, I am able to endorse almost every statement that he has made) it follows that the field of hysterectomy for the removal of ovaries for fibroids is narrowed down to the smallest limits. I have never been in favour of hysterectomy, simply because its death-rate is so high, and because it is performed for the removal of a tumour that rarely kills. So strongly do I now feel on this subject, that I would consider myself guilty of a criminal act were I to advise any patient to run the risk of her life—and such a risk—before having given a fair trial to this treatment, even were I sure that the mortality would not be greater than that which hysterectomy has given me in my private cases—under 4 per cent.—*British Med. Journal, Dec.* 10, *p.* 1257.

89.—ON THE TREATMENT OF FIBROID TUMOURS OF THE UTERUS BY ELECTRICITY.

By Skene Keith, M.B., F.R.C.S.Ed.

As it now seems to be within the range of possibility that operations for the removal of fibroid tumours of the uterus or for checking their growth and making them of little or no account, may have to be abandoned for a safer means of treatment, you may think that some apology is required for bringing a subject, therefore, belonging entirely to gynæcology before you, more especially as the subjects themselves expect to be safe from the knife of the surgeon, and have already tried what medicine can do for them, without any very gratifying results.

The apparatus suitable for the treatment of uterine fibroids is all that is requisite for the treatment of surgical diseases, except, of course, the special electrodes necessary for each disease. It will not probably be necessary to have so powerful a battery, as weaker currents appear to be sufficient for most conditions for which electricity has yet been tried. Taking the maximum body resistance, including that of the pad, screws, wires, &c., at 500 ohms, and the

current which is required at 30 milliampères, we find that ten or twelve large Leclomaché cells would prove sufficient. This resistance I have found is far above the average, and in this I am corroborated by Dr. Morrice of St. Bartholomew's Hospital, who estimates it at from 150 to 300 ohms, and gives an example where it was considerably less than the smaller number.

I shall now briefly narrate the histories of a few of the cases of fibroid tumours of the uterus treated by Dr. Keith and myself by electricity, selecting those where there has been a decided decrease in the bulk of the growth, as it is only those which bear on the diseased conditions already mentioned. I can only vouch for the primary results, but there is enough to encourage one to try this treatment in other conditions, and if it does no good it need certainly do no harm.

Case 1.—Miss H., aged 47, remembered that she had had a tumour for more than twelve years. The mass was a great burden to her. She suffered from severe bleedings and from retention of urine almost every month. The tumour was large, extending far up beneath the ribs, and must have weighed nearly 30 lbs. It filled the whole of the pelvis, and the cervix could not be reached, as there was no room to pass the finger between the pelvic portion and the pubes. The bladder was situated in the abdomen, and the urethra measured rather more than five inches.

On the 11th July the tumour was punctured from the vagina by the needle attached to the negative pole, and a current of nearly 200 milliampères passed through it for five minutes. In the middle of August, after the fifth sitting, the patient thought that she could walk more easily, and the finger could be passed up to the cervix. There had been as much trouble as usual at the period. After another sitting the tumour was much more movable, and was noticed to be distinctly nodular. Menstruation came on after the eighth application without pain or even discomfort, the first time for years. There was less discharge and no bladder trouble. It was not until after the thirteenth sitting that the tumour could be felt free of the ribs, and it was judged that it must have lost 10 or 12 lbs. in weight. The treatment is not yet finished, and has been much prolonged, as the patient has to attend to her shop, and is thus on her feet all day, and it has not been always easy for her to get some one to look after the business in her absence. She leaves her work, has the treatment, and goes back again, and has never been laid up even for an hour.

Case 2.—Mrs. C., aged 36. From about two years ago she has suffered from constant pelvic pains and pains in the left leg, from watery discharge, and from diminished menstrual flow. The uterus was large, lay forwards, and the cavity measured $4\frac{1}{4}$ inches. Behind and filling almost the whole of the pelvis there was a hard mass, evidently a fibroid. Operation: removal of the ovaries had

been agreed to, and would have been performed if electricity had not been tried. The treatment consisted in fourteen negative applications and two negative punctures, and extended over a period of five weeks. The result was that the uterine cavity became reduced to $3\frac{1}{2}$ inches, the mass, which previously had about filled the pelvis, felt about the size of a somewhat enlarged ovary, and the lady went home free from pain and feeling perfectly well.

Case 3.—Mrs. B., aged 57, had seen Dr. Keith thirteen years ago with a fibroid tumour which did not extend as high up as the umbilicus. Although menstruation ceased a number of years ago, the tumour continued to grow until it reached under the ribs on the right side, and was quite immovable. The old lady suffered great discomfort from the size, from great pain in the right side and thigh, and from very great bladder irritation. The tumour was very hard, filled the pelvis, and was protected from puncture, however, by the bladder. The sound was therefore passed into the cavity and attached to the negative pole. After the fourth sitting, the patient felt as if she had taken a new lease of life, for she had expected that her days would soon have been numbered. After nine sittings, she said she would be quite content with the improvement which had been gained.

The twenty-third and last application was made on the 20th October, and at that time the tumour was not half the size it had been. Since then the patient got a chill, and when heard of the tumour had become decidedly swollen, although the bladder trouble had not come back.

Case 4.—Miss G., age 50, had been tormented by her tumour for twenty years. She scarcely remembers having a good night's rest, is constantly in pain, and for the last five or six years has spent at least six months out of every twelve in bed. The patient could scarcely walk, and had to be assisted into the room by her servant. Examination of the abdomen had to be made with the greatest care on account of excessive tenderness. The tumour was markedly irregular, extended on the right side up to the level of the umbilicus; on the left it was higher, and there was a mass filling the whole of the left loin. There were 23 applications, of five minutes each, made of from 100 to 200 milliampères. After three sittings, the tumour could be handled freely; after seven, it was decidedly smaller. Five weeks after the commencement of the treatment, she walked fully three miles, and two weeks later went home. From a delicate, miserable creature she had been transformed into a fine, handsome woman. The tumour did not extend more than two inches above the pubes on the right. The mass which had been in the loin did not reach outwards as far as the anterior iliac spine, and was not higher than the umbilicus, and, moreover, the cervix was almost out of reach.

Case 5.—Miss G., age 40, had first had her attention drawn to

the presence of her tumour sixteen months ago. At that time she lost a great deal of blood every month, but a long rest in the country had greatly improved her general condition, and she looks fat and well. The tumour was not a large one, extending only up to the umbilicus. The treatment has consisted, as in the previous cases, of negative applications to the interior of the uterus. After five of these she felt that her jacket was loose, and that she could go upstairs without resting and panting. Now, after seventeen sittings, the tumour scarcely reaches to within two inches of the umbilicus, and the patient feels very well.

Case 6.—Miss W., age 44, had been told by Dr. Keith four years ago that she had a fibroid tumour. In the interval the growth has increased considerably. She has suffered from profuse menstruation for eight or ten years. The tumour extended to one inch above the umbilicus on both sides, and the cavity measured 6½ inches. Seven positive applications were made to the interior of the womb, but as menstruation came on more profusely than usual, thirteen negatives have been since made, so as to reduce the size as quickly as possible. The second period has been scarcely so bad as the first. Now there is a marked difference in the size and shape of the tumour. On the right side it has become lobulated, and is as high as the level of the umbilicus; on the left it has almost disappeared, and it is interesting to note that this part of the tumour had grown quite lately.

What has become of those tumours, or how they have partly disappeared, I do not know. At first one somewhat naturally supposed that the softer the tumour was the more quickly it would become reduced in size; but we have found that this is not so, and that it is the hard ones whose bulk is most easily reduced. It remains a fact that they do disappear to a certain extent, and this result is obtained without much risk, without much pain, and without confining any one of them to bed or even to the house.—*Edinburgh Medical Journal, Feb.* 1888, *p.* 688.

90.—THE TREATMENT OF PERI-UTERINE INFLAMMATION BY ELECTRICITY.

By G. Apostoli, M.D. Translated by W. W. Webb, M.D., M.R.C.P.

However excusable a certain amount of timidity and indecision may be in treating the acute and subacute conditions of this disease, there is nothing to hold back the surgeon from following my recommendation to act boldly, and even heroically, when he comes to encounter the chronic stage. Here he must, judiciously but unhesitatingly, push the intra-uterine galvano-cauterisation to its highest pitch, and then superpose the vaginal, chemical galvano-punctures, negative and monopolar. And in order that the inflamed peri-uterine zone may be directly brought under the influence of

the current, that its full effect may be secured, and that none of its derivative and resolutionary force may be vaguely expended, the only sure expedient must be utilised. I mean, that puncture must be made into the diseased part itself. The whole electric irrigation will then bathe its substance, and the disintegrating action will more easily make havoc of the inflammatory exudation, and ensure its absorption. The negative galvano-puncture is a therapeutical resource so full of promise, above all that I can express, that no exhortation of mine to familiarise yourselves with it can be too hardly driven home.

In another memoir, on galvano-puncture in general, I have stated the leading reasons which induce me to use the negative pole alone as the therapeutical agent for the purpose we have in view. I have also laid down the rules for well doing the operation, have pointed out the dangers, have given every precautionary counsel, and have left nothing unsaid as to the preparatory and post-operative care that ought to be taken.

To make the subject more intelligible, I will tell you what you may expect to see in a patient upon whom you have done the operation of negative galvano-puncture. Towards the latter part of the day, you will find that she complains of some little pain in the body, and she will most likely have uterine and intestinal colic.

This will cease perhaps before morning, and keeping her in bed for two or three days there will be, within that time, a marked subsidence of the feeling of distension, and, with that, the pelvis will be found to be less blocked up; the sensibility will not be so acute, and pressure will be better supported. Of course it is wiser, especially in bad cases, to maintain the recumbent position, so as to give a greater chance of the absorption of the exudative matter; but with the defective accommodation at my *clinique*, I have involuntarily had forced upon me a solution of the question of bedkeeping. If I were asked whether it were useful, I should answer, yes. But, as to its being obligatory and indispensable, the many recoveries which have taken place without it enable me to say that it may be dispensed with. And this is one of the recommendations of my system of treatment. We can in case of necessity do without a long confinement, and allow many of the women, I do not say all, to go through the operations, and yet not much interrupt their ordinary occupations. I have had, among the frequenters of my *clinique*, several cases of chronic perimetritis, varying in severity from the simple state of parametritis to that of a complication with lateral phlegmon and general cellulitis, which have been restored to health under such conditions.

General Precepts.—One of the first questions we have to consider is that of the propriety of using chloroform. To that I can only say that, as the punctures are more painful than the cauterisations,

an anæsthetic will often be advisable; but as, fortunately, more than half the patients have either an indifference to pain, or fortitude enough to bear it, they do very well without being narcotised. A subcutaneous injection of morphine some few minutes before the operation will, however, help them to submit to it more quietly.

1. *Intensity of the Operation.*—If the patient be not chloroformed, her feelings must guide us to the force of current we employ, resting at the point of her tolerance; but with chloroform, a dose of high intensity must be the rule. It may be raised, according to the urgency of the case, from 50 to 250 milliampéres.

2. *Duration.*—The mean time for the current to be kept running must be five minutes; but, if need be, it may be maintained as long as ten minutes.

3. *Time.*—This is a matter of indifference. Still, when a choice can be made, it is better to take the time midway between the monthly periods.

4. *Number.*—The number of operations will be ruled by the gravity of the case. One puncture will often put an end to a slight parametritis. A state of general cellulitis may make it necessary to operate eight or ten times. The operations must follow each other regularly; and if it be found that the early punctures have not produced an appreciable effect, we must conclude that there has been some operative omission, probably some antiseptic negligence, and the proceedings must be modified accordingly.

5. *Seat of Puncture.*—Within the limits of what is possible, two considerations must influence the practitioner in making his galvano-punctures, and he must reconcile them in the best way he can. It is essential that he should attack the most prominent part of the exudated mass, and at the same time he must endeavour to restrict his punctures to the neighbourhood of the uterus, and to make them as much as possible on the posterior parts. The exudation is almost always lateral or posterior, and this is the practice I have adopted. I recommend others not to deviate much from it. I make out, with the pulp of the index finger, the central or projecting part of the deposit. I search attentively for every arterial pulsation, and avoid every spot where I find it. I then, without a speculum, pass the celluloid sheath up the vagina, guiding it with the point of the finger to the place chosen for puncture, hold it there steadily, and press the trocar through it, to a depth of not more than one centimètre, into the swelling. The trocar is made to enter in a horizontal direction, and then, by turning the point, it is forced on towards the axis of the uterus. I thus escape all danger of touching the peritoneum or of wounding any adjacent organ.

6. *On the Trocar and the Length of the Punctures.*—Platinum is not indispensable for the negative pole. Metals are not attacked by it. We have therefore the option, and it is better to take steel,

as, with it, there is no difficulty in making the punctures. The trocar should be long and filiform, but not too slender.

The punctures must be made as short as possible. There are two reasons for this advice: long punctures are both dangerous and useless. I say useless, because the trocar only serves the purpose of introducing the current at a given spot. The penetration of the current will be in no way influenced by the depth of the punctures. But long punctures are dangerous, as the point of the trocar may pierce the peritoneum, and give rise to internal hemorrhage from some wounded vessel which had remained untouched in examination by the vagina. They are also dangerous from the injury they may do to the peritoneum, ending in suppuration or gangrene, for which it would be difficult to secure an outlet.

7. *Perfect Antisepticism.*—The importance of rigorous antiseptic precautions requires no explanation. Besides the washing out of the vagina with the sublimate solution, before and at the completion of every operation, the patient should not be dismissed without the introduction of a plug of iodoform gauze. This should be renewed every day, or at least every second day. Beyond the protection it gives as an antiseptic, it serves the purpose of opposing an obstacle to any sexual relations.

8. *Local Effects of the Operation.*—There is no obscurity about this point. The eschar resulting from the negative galvano-puncture will separate, on an average, between the fourth and the eighth day, and there will be a loss of substance corresponding to the size of the eschar. A sinus is left penetrating into the substance of the exudation, and setting up a drainage, which will last in proportion to the size and depth. The small sinuses will, of course, close up the soonest. But the mean duration of the permeability of these openings may be taken as from fifteen to thirty days, during all which time the iodoform gauze must be constantly renewed.

To sum up in a few words the essential parts of my researches, and the clinical results which have been worked out from them, I may say: (1) Electricity, in the form of faradic currents of tension, can, and ought to, be made to calm the pain at the outset of an acute attack of perimetritis, and is a sedative of the first importance in abridging the first stage of inflammation. (2) The continued current is a power which we use in two ways: first, in the form of intra-uterine chemical galvano-cauterisation, to cut short the acute stage; second, as vaginal, negative, galvano-punctures, to get rid of the chronic condition in all its forms and stages.

Is the restoration *ad integrum*, complete and definitive, the prevailing result of my treatment? I do not pretend that such is the case; I do not even expect it; and I content myself with offering for trial a method of relief and cure which I believe to be more speedy than any other.

Again, we may force electricity into our service in another way. Given a case of actual suppuration, or of threatening suppuration, we have only to use our negative galvano-puncture, form an eschar, open up a sinus, and direct the exit of the pus to the nearest point of the vagina. And this we can do at will, when it is most fit to do it, and in the most convenient way.

We have, then, in the galvano-puncture, an effective means of arresting an inflammation, and of dispersing an inflammatory deposit. Or, we may use it as a sure and direct way of opening a profound and ready formed collection of pus. No plan of setting up a vaginal drainage, controllable as to amount and duration, can be more simple; and this we may associate with any local and antiseptic treatment that may be desirable, as I have shown elsewhere in relation with the subject of hæmatocele.

The subject, of which I have just jotted down the salient points for your consideration, is new and undeniably full of interest. You must not suppose that I think I have done much for it, as I may fairly claim to have done for fibromata and endometritis, but what I have seen and watched with painstaking anxiety, is so rich in clinical results, so fertile in unexpected therapeutical consequences, that I feel I cannot too earnestly urge you to study the subject for yourselves, and to fathom it to the utmost, if possible.—*British Medical Journal, Nov.* 19, 1887, *p.* 1096.

91.—ON THE TREATMENT OF CANCER.

By Professor JOHN CLAY, Birmingham.

The following cases of epithelial cancer have been treated during the past year, and as the disease has disappeared under the use of Chian turpentine they may be deemed of sufficient general interest to merit publication.

Epithelioma of the Uterus and Vagina.—Mrs. B——, aged fifty-five, residing in Devonshire, consulted me on Feb. 16th, 1887. She has never had children. She was operated upon twenty years ago by the late Sir J. Y. Simpson for contraction of the os uteri. Since that time she has not enjoyed robust health, but has not suffered from any special illness. Menopause two years ago. She has an anxious expression, is anæmic, but not cachectic. Six months ago she had a profuse purulent discharge, which continued for two months, when a severe hemorrhage ensued lasting more than a fortnight. She had some pains in the back and in the lower part of the abdomen, but they were never very acute. Palliative treatment only was adopted until the gravity of the case was recognised by a consultant, who excised the os uteri four weeks before I saw her. The operation did not arrest the growth, which seemed to develop more rapidly afterwards and speedily involved the vagina. A few days before coming to me she consulted Mr. Knowsley

Thornton of London, who confirmed the diagnosis of malignancy and expressed his opinion that the case was too far advanced for operative treatment; he thought it improbable that the patient could live longer than a month.

On examination I found that the posterior wall of the vagina at its upper part was occupied by a growth of the size of a walnut. There was also a nodule, which was more diffuse, and seemed to arise from the anterior wall of the vagina. These growths, which bled readily on manipulation, met in the centre, and entirely prevented any exploration of the uterus. The lymphatic glands were apparently free, and there was no bladder or rectal complication.

As there was no other plan of treatment open to her, I recommended that the Chian turpentine should be pushed vigorously, the patient deciding to remain in Birmingham under my care. She was ordered one teaspoonful of Chian turpentine mixture, with resorcin, three times daily, to be rapidly increased to nine teaspoonfuls; the vagina to be syringed with equal parts of vinegar and water twice a day, and the growth to be painted two or three times each week with a solution of chromic acid (1 in 24). With the use of these remedies the growths diminished rapidly during the first two months, so that I was enabled to determine that the one mass did not proceed from the vaginal wall, as there was a projection of uterine tissue remaining, about a quarter of an inch in extent, proving that at the first examination there was considerable eversion of the cervix, and that when reduced in size the parts resumed a more normal position. The treatment was steadily continued, with occasional omission of the medicine, for two or three days consecutively. The vaginal growth entirely disappeared in about four months. The "stump" of the uterus was irregular, but did not present to the naked eye any appearance of being cancerous. There was no pain, and the slight discharge was singularly free from odour. At the end of six months the patient could walk three or four miles daily with comfort, and on a few occasions she drove upwards of twenty miles in an open carriage without experiencing fatigue. At the seventh month of the treatment she expressed herself as feeling well, and left Birmingham for Devonshire. Dusart's syrup was taken for the last three months. Mr. B——, in writing from home to me, stated that he had not seen his wife looking so well for fifteen years.

I had an opportunity of carefully examining Mrs. B—— a few days ago, when I found that the vaginal growth had entirely disappeared; the part it had occupied was covered with pale but healthy mucous membrane. The portio vaginalis was limited to a ring of healthy tissue about one-third of an inch in depth. The os was patulous, readily admitting the finger, which passed into the uterus about three-quarters of an inch. The interior was smooth, excepting posteriorly, where there was a nodule the size of a pea,

which looked healthy, and appeared to be a portion of tissue which had escaped the cancerous attack. There was no discharge, and the patient was exceedingly well.

Epithelioma of Tongue.—Mr. S——, of Sheffield, aged forty-eight years, consulted me on May 20th, 1886. He was in fair health and well nourished. He stated that he had been suffering from an ulceration of the mouth for some time, to which caustics had been frequently applied. He had recently seen Mr. Jonathan Hutchinson of London, who pronounced the case to be one of epithelioma, and advised its immediate removal by excision. The operation, as represented to the patient, appeared to him an unusually severe one, especially as it did not promise to permanently cure him. Casually hearing of the case of Mr. M——, recorded in the Lancet of Oct. 16, 1886, he determined to consult me.

On examination, a fungating growth was found in the floor of the mouth on the left side, involving the gum and the edge of the tongue for an inch and a quarter. The tissue surrounding it was very dense, the infiltration extending for quite half an inch. There were no sharp or irritating teeth, but the patient was a great smoker.

He was ordered Chian turpentine with resorcin, and to take one-twelfth of a grain of chrysophanic acid in pill every other night, also to have the growth painted with a solution of chromic acid (1 in 24) every other day. A gargle of perchloride of mercury (1 in 2000) was used as an antiseptic. This treatment was continued for four months, when it was found that two pieces had sloughed away from the anterior edge of the growth, and that the surface of the ulcer was covered by the characteristic grey slough usually present after the use of the mixture. The medicine was increased in quantity, and was well borne. The infiltration lessened, and the growth gradually disappeared—first from the gum,—being replaced by apparently healthy tissue. The floor of the mouth healed over, and the ulceration was limited on the tongue to a patch little larger in size than a sixpence.

At the end of thirteen months of the treatment the patient went to the seaside, where he caught a chill, and for the first time there was an enlargement of the left submaxillary gland, and a small abscess formed in the floor of the mouth. He was ordered half-drachm doses of the syrup of iodide of iron, and was directed to discontinue all local applications for a fortnight. At the end of this time the adenitis had disappeared. When two months more had elapsed the ulcer was only the size of a threepenny piece. Mr. S—— has been able to attend to his profession during the whole of the treatment, and is now in excellent health. He patiently and perseveringly followed out the treatment, being ably nursed by his wife, to whom great credit is due for the punctual and careful manner with which she carried out my instructions.

Epithelioma of Nose and Face.—Mrs. S——, aged forty-five, a widow, consulted me on June 4th, 1887. Menstruates regularly; general health good. Has an epithelial ulcer on the left ala of the nose, and encroaching on the cheek. It began as a small warty growth two years ago, and readily bleeds during bathing, &c. Perforation was imminent. She had been under medical care almost constantly since the appearance of the disease, but without benefit, and as the affection was rapidly extending, she applied to me.

In this case I was desirous of trying the effect of the Chian turpentine alone. I therefore ordered her two teaspoonfuls three times a day, and to dress the ulcer with simple ointment. During the first six weeks there was no change in the appearance of the condition, and she began to despair of ever being cured. I told her, however, to persevere. After the treatment had been continued for two months the sore was covered with a greyish slough. At the fourth month two-thirds of the ulcer had healed, showing only a dark crust about the size of a fourpenny-piece. In two or three weeks the scab fell off, leaving the sore absolutely healed.

Epithelioma of the Uterus.—Dr. Hamilton of Finsbury-circus, London, has kindly furnished me with particulars of a case treated by him, and of which nothing was known to me until I received his report. The notes should be very highly appreciated, as the case is unique in regard to independent testimony, combined with a thorough and incontestable diagnosis. The communication is as follows:

"May 27th, 1887.—The patient some five or six years ago had a small growth on the cervix uteri, which I pronounced to be epithelioma; it was hard, nodular, and attended with an irritating discharge, which was frequently bloody. After consulting a local medical man, who confirmed the diagnosis, I took her to Mr. Knowsley Thornton, who also agreed with us, and excised the growth, putting on chloride of zinc paste afterwards. I then had sections made of the tumour, examined it microscopically, and sent one to Mr. Thornton; it was undoubtedly malignant. The growth returned in about six months' time, and the patient again saw Mr. Thornton, who stated that the cancerous material had now invaded the body of the uterus, which was fixed with it, and that this time he could do nothing without he scraped it all away from the interior. This, however, he did not advise at all strongly; he just took off what he could on the vaginal part of the cervix, and put on some chloride of zinc paste as before. I then made up my mind to try the Chian turpentine, and I kept her on that and the compound sulphur pills for about a year; the symptoms gradually disappeared, the discharge and blood lessened, until, I may say, now there are no symptoms whatever indicating a return. Now this was a case of undoubted epithelioma, as shown microscopically; and I have, as you may imagine, now the strongest possible faith in the efficacy of Chian turpentine."—*Lancet*, *Nov.* 19, 1887, *p.* 1005.

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PRINTED FOR D. I. ROEBUCK BY GOODALL AND SUDDICK, LEEDS